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Environmental Impact Report

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SECOND STREET SQUARE

82.591E

PUBLICATION DATE: September 30, 1983
PUBLIC COMMENT PERIOD: September 30, 1983 through November 14, 1983
PUBLIC HEARING DATE: November 3, 1983

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TO THE ENVIRONMENTAL REVIEW OFFICER,
450 McALLISTER STREET, SAN FRANCISCO,CA. 94102

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SECOND STREET SQUARE

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Second Street Square :
draft environmental
1983.

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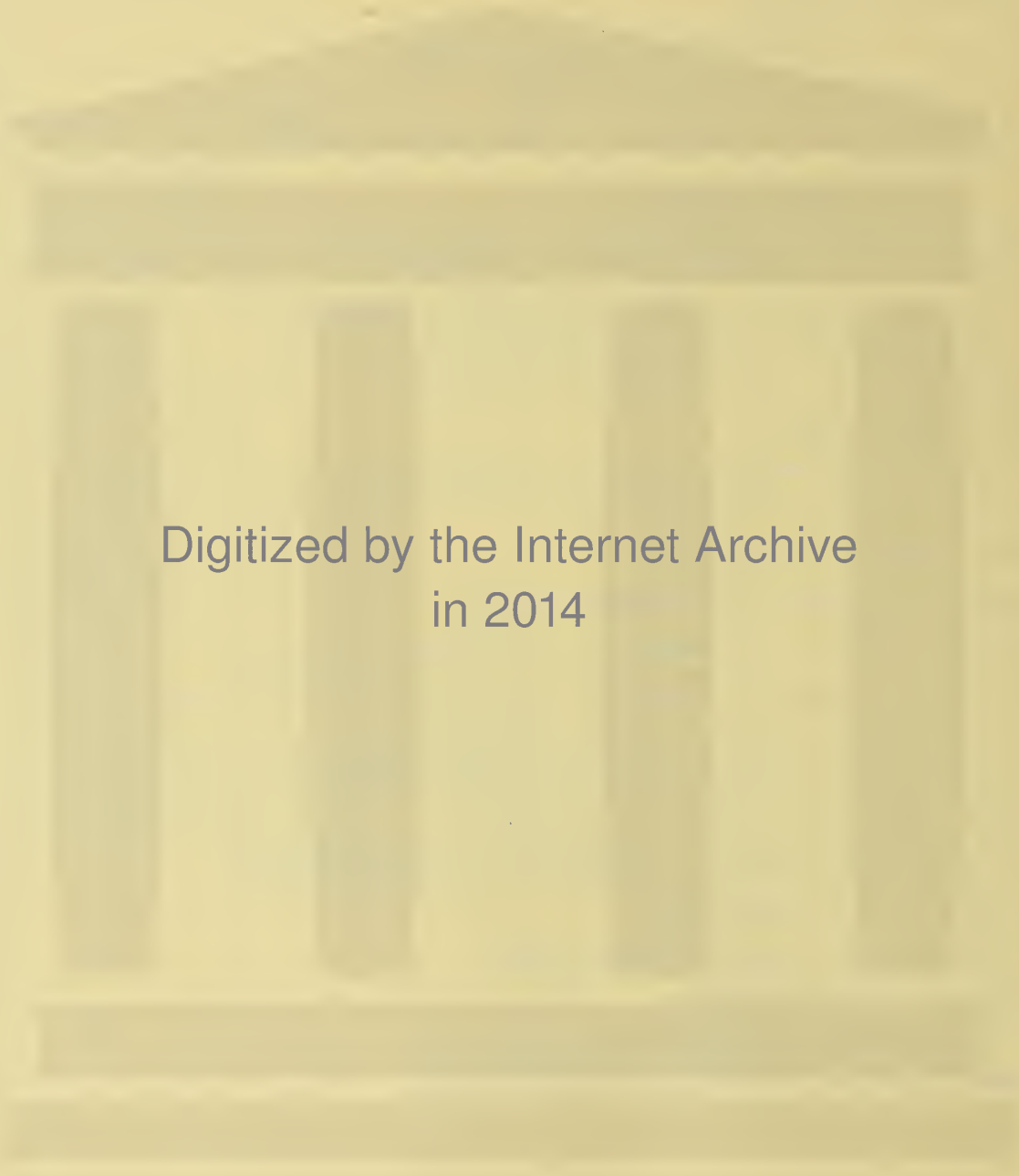

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I. SUMMARY

A. PROJECT DESCRIPTION

The proposed Second Street Square would be located on Assessor's Blocks 3764 and 3774, Lot 70 and Lots 54 and 55, respectively. The site occupies the northeast and southeast corners of the intersection of Second and Bryant Streets and is in an M-1 (Light Industrial) district.

South Beach Development Company, the project sponsor, proposes to convert four existing buildings from currently vacant manufacturing space to either an office building or a high technology trade mart. Both the office project and the trade mart project are discussed in similar detail in this EIR.

The site covers 118,567 gross square feet (gsf) and the existing buildings contain 383,000 gsf of floor area. The existing buildings range from three to six stories. The project sponsor would add 60,000 gsf to the top of one of the buildings in the form of two 3-story towers, bringing the project total to 443,000 gsf for an effective FAR of 3.75:1. The proposed addition to Building 3 would bring it to a height of 105 feet; the other building heights vary but are lower. A Conditional Use authorization would be required because the top two floors of the new addition would exceed the bulk limit of the Planning Code. Common to both the office building and the trade mart would be the provision of five loading spaces and 298 parking spaces. The cost of renovation and construction of either proposed project is estimated at $18,350,000 (1983 dollars) and would take about nine months.

The proposed office project would contain 333,000 gross square feet of office floor area; 30,000 gsf of recreational space; 40,000 gsf of computer/data processing space; 25,000 gsf of accessory retail space; and 15,000 gsf of storage space. For either project the sponsor would seek a Conditional Use authorization for a Planned Unit Development having parking which does not meet the Planning Code requirement for independently accessible

off-street parking spaces. The parking deficit for the office project would be 20 spaces, but for the trade mart there would be no deficit. (Calculations are provided in Section IV. C., Transportation, page 80.)

The high technology trade mart plan, which is being considered along with the office project, would be a place for major semi-conductor manufacturers to exhibit and demonstrate hardware and software packages with business and technical applications. The mart would offer a coordinating service for the electronics industries of the Pacific Basin Area (North America and the Orient) in the form of a central location for display, financing and information dissemination. A total of 343,000 gsf would be devoted to exhibit area, enabling approximately 100-150 companies to display, demonstrate and sell their equipment. Approximately 60,000 square feet would be allocated to accessory office use; 25,000 square feet would be converted to accessory retail uses; and 15,000 square feet would be used for storage. As with the proposed office project, 298 parking spaces and five loading spaces would be provided.

The pedestrian bridge now connecting the buildings on either side of Bryant Street would be moved 15 feet west, which would require a revocable encroachment permit.

B. ENVIRONMENTAL IMPACTS

1. Initial Study

An Initial Study was prepared for Second Street Square and published on February 25, 1983. Issues that were considered to require no further discussion in this EIR as a result of the Initial Study are: Visual Quality and Urban Design; Noise; Construction-related Air Quality and Shadows; Utilities and Public Services; Biology; Geology/Topography; Water; Hazards; and Cultural and Historic factors. The Initial Study is attached to this report as Appendix A, page A-1.

2. Land Use

Both the office and trade mart projects would comply with zoning, height and floor area requirements of the Planning Code but the top two stories of the new three-story addition would exceed the bulk limitations for the site. Second Street Square, in either form, would cumulatively contribute to new and proposed development occurring in the South of Market area in general and along Second Street between Mission and Townsend Streets in

particular (page 45). Office projects proposed in the South of Market area are included in all cumulative analysis for downtown office development.

3. Employment, Housing and Fiscal Factors

These factors would differ between the office and trade mart projects, with the trade mart generating less of an impact.

The office project would create permanent employment for approximately 1,385 persons, including 1,210 office jobs, 70 retail jobs, 40 computer personnel, 15 recreation workers and nearly 37 jobs for janitorial/service workers. Approximately 1,425 additional jobs in the Bay Area would be indirectly created through the multiplier effect. Currently there is no employment on the site. The potential increased revenues to the City's General Fund would be approximately $1,013,000-$1,018,000 annually (page 56).

According to the City Planning Commission's Office Housing Production Program (OHPP), the housing requirement for the office project would be 234 units (page 52).

The trade mart would be likely to employ substantially fewer people. Total employment is estimated at 440 including 330 trade mart and accessory office workers, 70 retail employees, and 37 maintenance workers. Approximately 524 additional jobs would be indirectly created through the multiplier effect (page 52). The potential increased revenues to the City would be about $559,000-$564,000 annually. The one-time transit impact development fee would generate $300,000 (page 64).

As there was 70,000 square feet of offices within the former use,[1] the trade mart project would result in a net loss of 10,000 square feet of office space at the site. The OHPP guidelines apply exclusively to office workers so that no housing requirement exists for this project (page 53).

4. Transportation, Circulation and Parking

The proposed office project would generate about 930-1,660 new peak period person trips to and from the project site. Of these an estimated 325-540 would be vehicular trips, 125-215 by Muni, 50-90 by BART, and the remaining 430-905 by other regional public transit and pedestrian trips. The trade mart project would have less of a transit impact, generating about 365-730 new peak period person trips. About 25-50 of these trips would

be by auto, 40-80 by Muni, and the remainder split among regional public transit (BART, SP, etc.) and pedestrian trips (page 68).

The proposed office project would generate about 1,660 new two-hour peak period (4:00-6:00) person trips to and from the project site with 935 occurring during the peak hour (4:30-5:30). The office project would contribute about 2.4% of the cumulative two-hour peak period trip generation of downtown and south of Market development and about 2% of the one-hour peak period (page 69).

The office project would contain 298 parking spaces, 370 less than would be required under the Planning Code for a new use on the site. After credit for pre-existing efficiency, the deficit under the Code would be 211 spaces. The majority of the spaces provided, however, would not be independently accessible, as required by the Code. Additionally, a portion of these spaces would be provided on State property subject to a lease.

For both the office and the trade mart the project sponsor is seeking Conditional Use authorization for a Planned Unit Development in order to modify the Planning Code requirement for parking. The office project would generate a parking demand for about 680 spaces, 382 more than is being provided. The office project's added parking demand would increase surrounding occupancy from 85% to 91% (page 82).

The proposed trade mart project would generate about 730 new two-hour peak period person trips to and from the project site of which 365 trips would occur during the peak hour. The project would contribute about 0.9% to the cumulative two-hour peak period trip generation of downtown and south of Market development (page 69), and about 0.8% of the one-hour peak period.

Like the office project, the trade mart would contain 298 parking spaces, 88 less than would be required under the Planning Code for a new use on the site. After credit for pre-existing efficiency, the project would meet Code requirements as to number of spaces required. As discussed above, however, the majority of these would not be independently accessible. The total parking demand from the trade mart would be 310 spaces. The site's net new demand would be 96% met by the on-site parking thereby leaving area's parking occupancy (85%) the same (page 84).

5. Air Quality and Climate

Since most of the construction activity would occur inside the existing structure, it is unlikely that construction would create violations of air quality standards. Projected CO concentrations for 1984 and 1988 were calculated for the four intersections most heavily impacted by Second Street Square. The results indicated that no violations of state or federal air quality standards would occur as a result of the proposed project (either trade mart or office/commercial) or projected cumulative development (page 89).

6. Energy

Average monthly total energy use within the proposed office project (based upon other City projects and Title 24 compliance) would be 8.6 billion BTU or 1,500 barrels of oil (page 93). The trade mart's average monthly total energy use would be 4.3 billion BTU or 800 barrels of oil (page 93).

C. MITIGATION MEASURES

A few of the mitigation measures included in the proposed project are listed below; the complete list of measures included or not included is found in Section V., page 100. The mitigation measures listed would be the same for the office project or the trade mart, except for housing, which would not apply to the trade mart.

- The project sponsor would initiate a comprehensive transportation system management (TSM) program aimed at reducing the peak-hour effects of project travel. Elements include: designation of a Transportation Coordinator, priority parking for ride-sharing vehicles, on-site sale of transit passes, and so forth (page 101).

- Contractors would maintain and operate construction equipment to minimize exhaust emissions (page 104).

- Contractors would be required to cover the loads of trucks carrying waste materials from the site in order to reduce dust and potential spillage onto streets (page 104).

- Buildings 1 and 4 would be upgraded to resist seismic loading by the addition of a steel frame on new spread footings with a 200% safety factor against ultimate soil failure under designed loads. Building 3 would also have new spread-footing foundations (page 105).

- Specific construction observation, foundation, drainage and retaining wall design recommendations contained in the geotechnical investigation for the site would be included in the project (page 105).

- Sound insulation features such as acoustic double-glazing and non-operable windows would be installed by the project sponsor to reduce impacts from traffic noise nearby (page 103).

D. ALTERNATIVES TO THE PROPOSED PROJECT

1. No Project

This alternative would entail no change to the buildings as they now exist. The buildings could be used for industrial use. There would be no addition to the top of Building 3. The project sponsor has rejected this alternative because it would not provide office or trade mart space to respond to existing demand in San Francisco, and would not provide a return on their investment (page 108).

2. Design Requiring No Special Authorization

This alternative would involve primarily an office project. The total gross square footage would be 383,000 -- 60,000 square feet less than either the proposed office or trade mart project; the three-story addition would not be built. A total of 260,000 gross square feet (gsf) would be devoted to office space; computer/data processing space and recreational uses would each contain 30,000 gsf; 15,000 gsf would be allocated for accessory retail and 10,000 gsf would be used for storage. The pedestrian bridge would not be moved. Conditional Use authorization for exception to the bulk limit and parking requirement would not be sought; 435 independently accessible parking spaces, the required amount, would be located on-site (page 109).

The project sponsor cannot add more parking to the site than is currently proposed (298 spaces, most of which are not independently accessible) due to the structural limitations of the existing structures. For reasons of technical feasibility, this alternative is rejected.

3. Retail Use

This alternative would involve the adaption of the existing buildings into specialized retail sales outlets open to the public. The total gross floor area would be 383,000 gsf, of which 198,000 gsf would be retail, 80,000 gsf would be storage, 45,000 gsf would be office, 30,000 would be accessory retail and 30,000 gsf would be recreation area. The 60,000 square foot addition would not be built. This alternative design would include 298 parking spaces (page 110).

The project sponsor thinks that there would be a limited demand for a retail alternative of this size. Because there is little foot traffic in this area, the location would not attract many drop-in customers.

4. Ground Floor Industrial Use

This alternative would call for industrial uses to occupy the ground floor of Buildings 1-2, 3 and 4 for a total of 94,000 net usable square feet. Offices would be located on the upper floors and would contain 332,891 gsf. The total square footage for this alternative would be 443,000, the same as the proposed project. About 108 persons would be employees of the industrial or manufacturing tenants and about 1,331 persons wold be office employees (page 113).

The project sponsor thinks that the obstacles to free circulation (i.e. elevator banks, life safety systems, columns) would not be acceptable to either office or industrial tenants. Conflicts would arise between the needs of the office workforce to reach the top floors and the needs of industrial tenants to maintain direct access and unencumbered movement of goods. Also, he believes the shared loading docks would not serve either the office or industrial space to best advantage. Finally, the office rents would have to be raised in order to make the industrial space affordable which would reduce the marketability of the office space. For these reasons, the project sponsor has rejected this alternative.

---

[1] Don Davella, Plant Contractors, telephone conversation, August 24, 1983.

II. PROJECT DESCRIPTION

A. OBJECTIVES OF PROJECT SPONSOR

South Beach Development Company, a joint venture of Ron Kaufman Companies and General Atlantic Holding Company, proposes to convert four existing buildings from currently vacant manufacturing space to either an office building with some commercial and recreational/sports uses or a high technology trade mart. Both of these alternative plans -- the office-oriented project and the trade mart project -- are discussed and evaluated in similar detail in this EIR.

It is the intent of the project sponsor to make a positive contribution to the City by converting and renovating existing buildings while achieving a reasonable return on the investment.

B. LOCATION

The proposed Second Street Square project would be located in the South of Market area on the periphery of San Francisco's Financial District, in an M-1 (Light Industrial) district and a 105-F height and bulk district. (Full site coverage is allowed up to 80 feet; between 80 feet and the 105-foot height limit the maximum building length is 110 feet and the maximum diagonal dimension is 140 feet.) The site occupies the northeast and southeast corners of the intersection of Second and Bryant Streets, Assessor's Blocks 3764 and 3774, Lot 70 and Lots 54 and 55 respectively (Figures 1 and 2, pages 9 and 10).

C. PROJECT CHARACTERISTICS AND SCHEDULING

1. Elements Common to the Mart and Office Projects

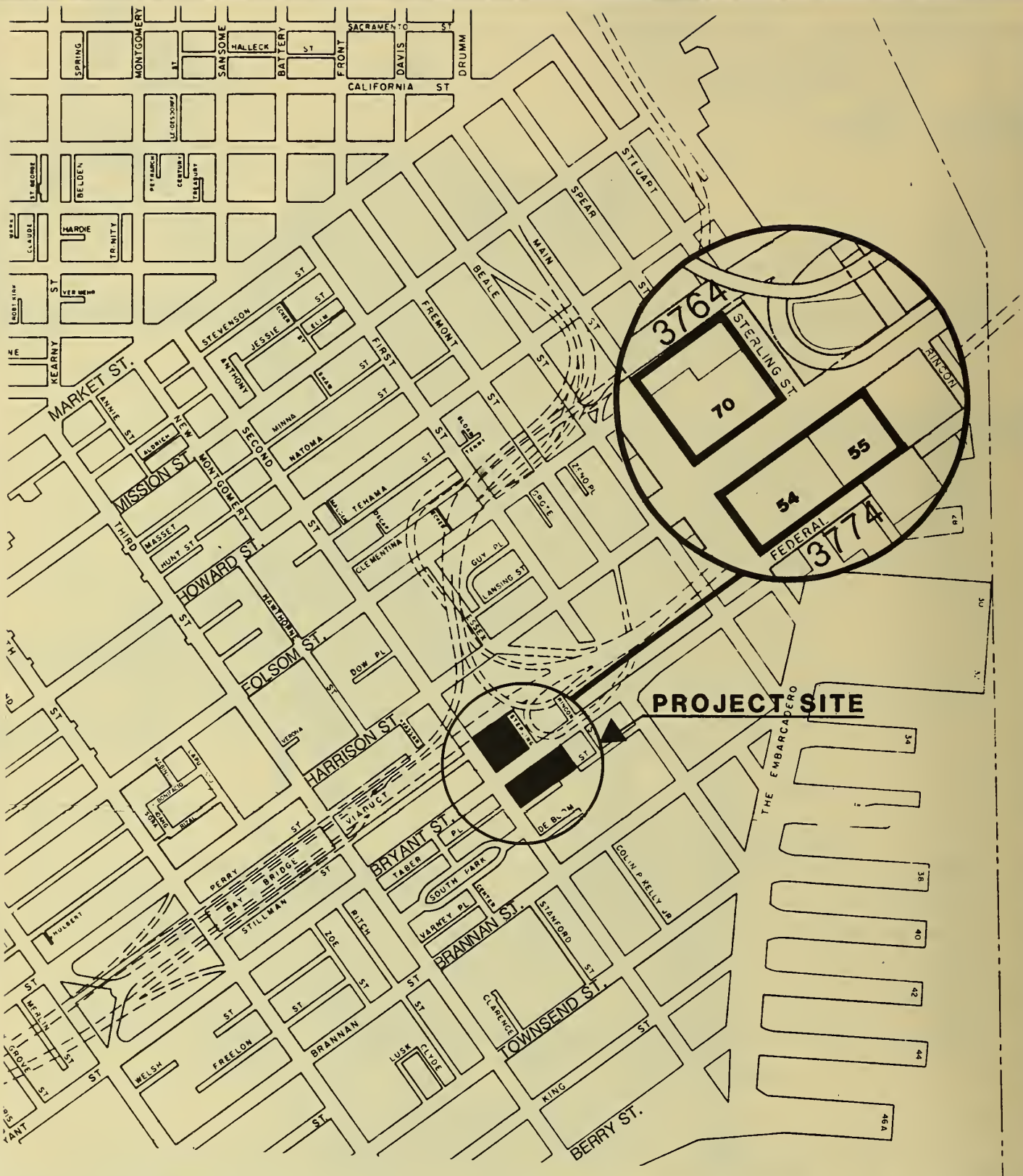
The site covers 118,567 gross square feet (gsf) and the existing buildings contain 383,000 gsf of floor area. There are four existing buildings (Figure 3, page 11). The project sponsor intends to add about 60,000 gsf on top of Building 3 bringing the project total to 443,000 gsf. New construction would consist of adding two 3-story towers on the top of

SOURCE: EIP

Second Street Square

REGIONAL LOCATION MAP

1

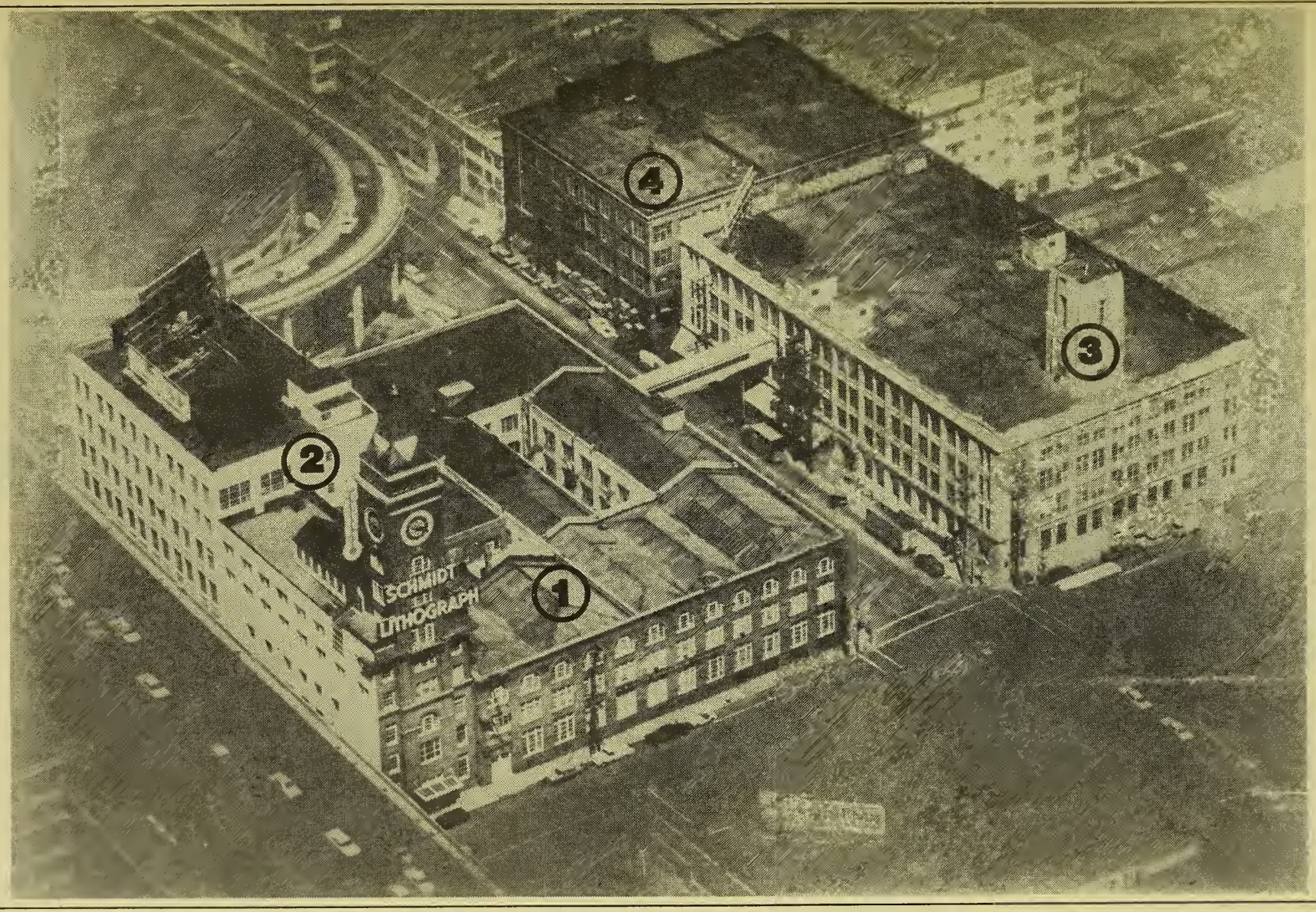


SOURCE: EIP

Second Street Square

SITE LOCATION MAP

2



NUMBERS INDICATE EXISTING BUILDINGS

SOURCE: STONE & STECCATI, PHOTOGRAPHERS

Second Street Square

PROJECT SITE PHOTOGRAPH

3

Building 3, bringing it from an existing height of 56 feet up to a height of 105 feet or seven stories. Building 1 varies from 48 feet to 72 feet and the clocktower is 177 feet. Building 2 is 90 feet; Building 4 is 56 feet. The water tower currently situated on top of Building 3 would be removed. The clocktower on Building 1 would remain, thus preserving a local architectural feature. Second Street Square is currently visible, most notably from eastbound I-80 elevated freeway which runs right by the site. The three-story addition would also be visible (mainly to passing motorists) from this vantage point (Figure 4, page 13). The addition would be designed in the same style as the existing building. (The photomontages do not indicate the proposed architectural detailing, rather they are primarily meant to show proposed height and bulk.) From Second and Brannan Streets the view would include a portion of the existing buildings and the new addition (Figure 5, page 14). The project sponsor proposes to move the existing pedestrian overpass 15 feet west, toward Second Street (Figure 6, page 15). The pedestrian bridge would link the buildings and facilitate internal circulation.

Improvements to the exterior of the building (painting, tree planting) have already taken place. Interior renovation and construction of the towers would begin in the fall of 1983 and continue for approximately nine months. The cost of renovation and construction is estimated at $18,350,000 (1983 dollars). General contractors for Second Street Square are Plant Contractors, Inc.

The parking requirement of the City Planning Code for the office use would be 694 spaces. The City Planning Code Parking requirement for the trade mart would be 386 spaces. After credit for pre-existing efficiency, these requirements would be 211 and 0, respectively. (Parking requirements are discussed in detail in Section IV.C. Transportation, page 80).

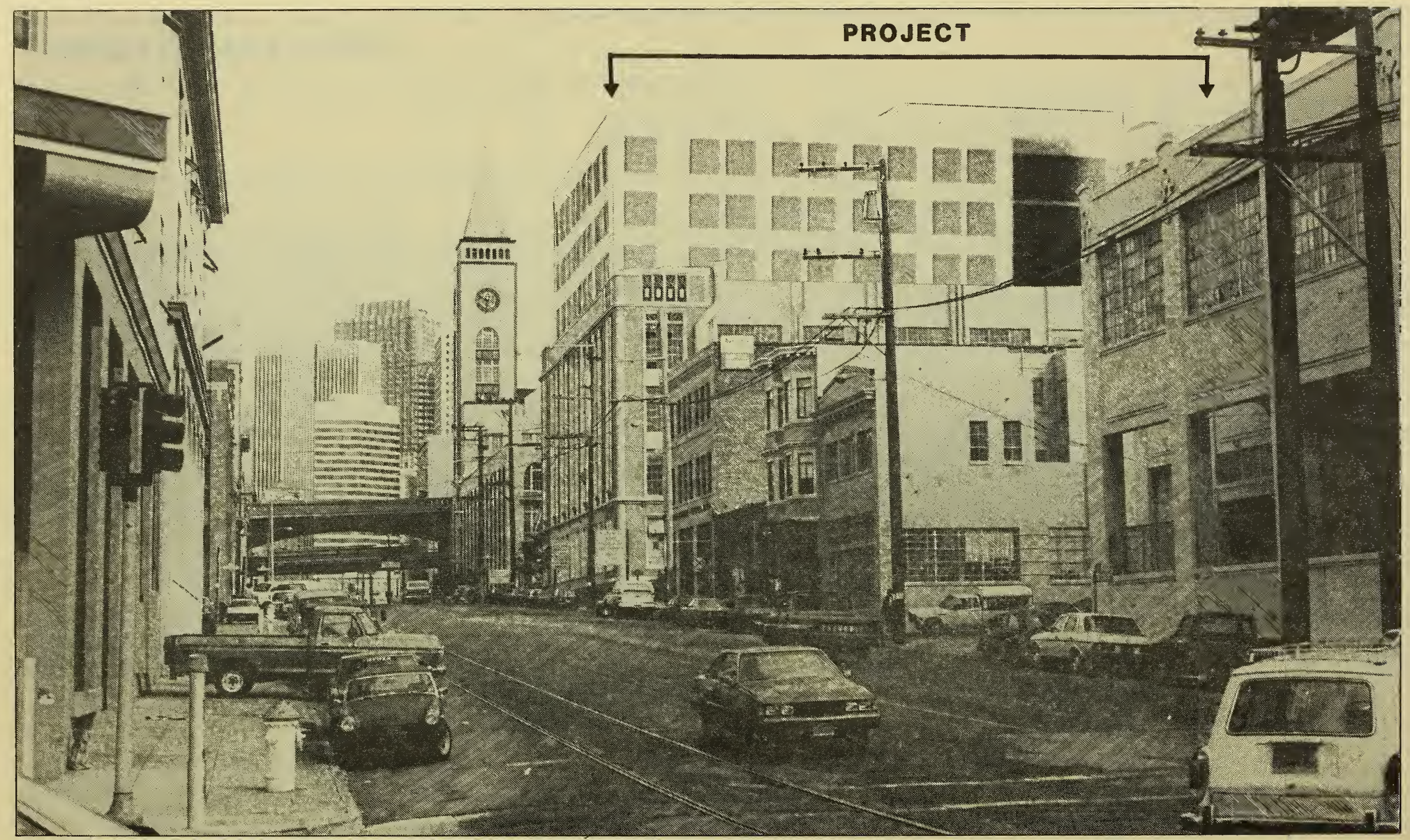
Approximately 298 parking spaces would be available: 20 self-park spaces on Federal Street; 230 spaces in Building 3 (see Figure 7, page 16) accommodated by valet and parking machines; and 48 off-site spaces in the lot adjacent to Building 1 which would have parking machines and be served by attendants. The parking machines are factory-fabricated, electrically-powered, hydraulically operated, roll-on type automotive lifts, which permit stacking of two cars vertically in one parking space. The machines are designed for interior or exterior use.

VIEW EAST OF PROPOSED PROJECT
FROM JAMES LICK FREEWAY NEAR THIRD STREET

PHOTO INDICATES HEIGHT & BULK ONLY. DETAIL NOT SHOWN

Second Street Square

PHOTOMONTAGE **4**



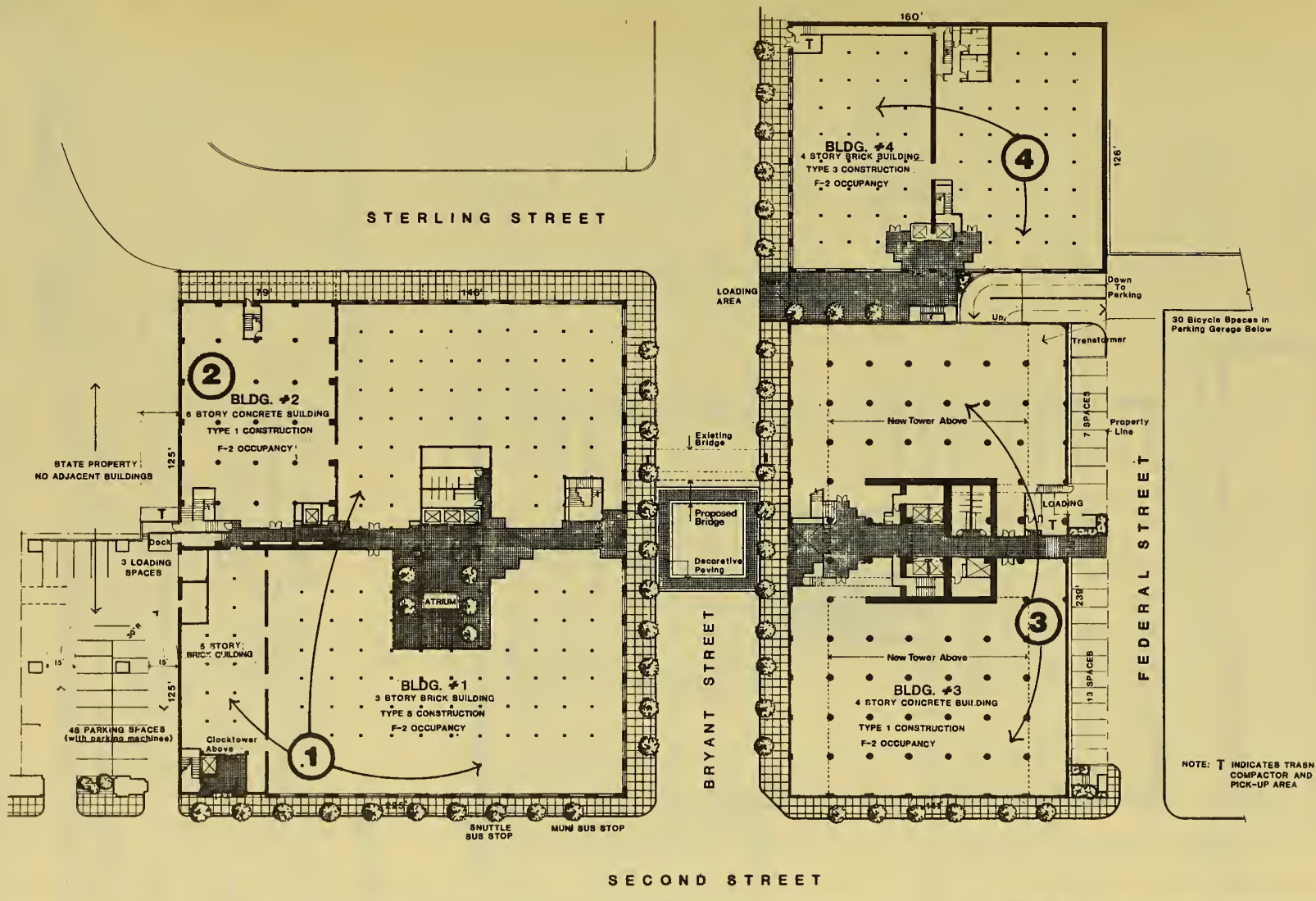
VIEW NORTH OF PROPOSED PROJECT
FROM SECOND AND BRANNAN STREETS

PHOTO INDICATES HEIGHT & BULK ONLY. DETAIL NOT SHOWN

Second Street Square

PHOTOMONTAGE

5



(1) NUMBERS INDICATE BUILDING DESIGNATION

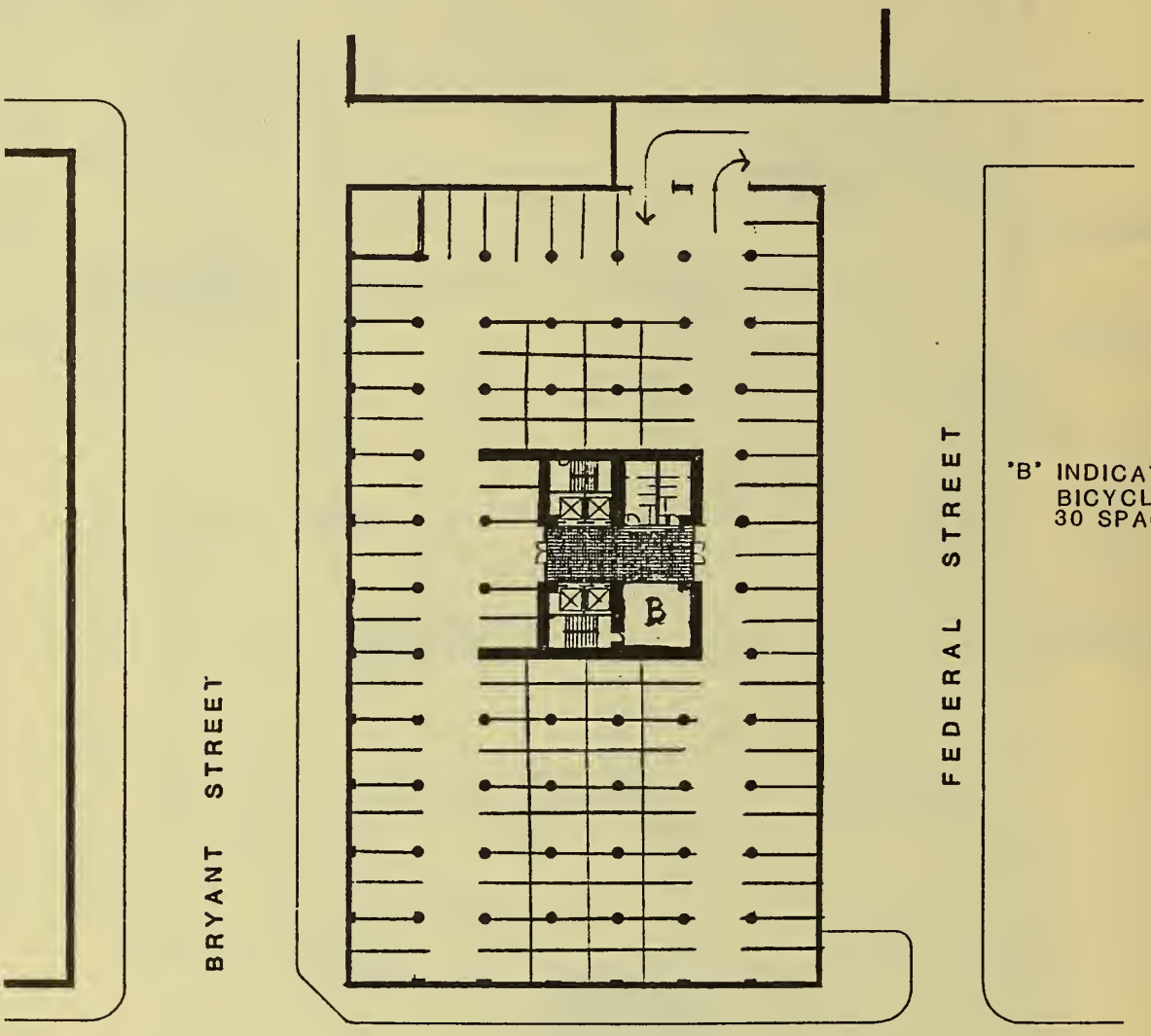
SCALE 0 20 40 80 FEET

SOURCE: PLANT CONTRACTORS, INC.

Second Street Square

FIRST FLOOR PLAN

6



BUILDING # 3	PARKING RECAP
84 SPACES	SELF PARK
28 "	TANDEM
112 "	LIFTS
6 "	VALET
230 SPACES	TOTAL

SCALE 0 20 40 80 FEET

Second Street Square

BUILDING 3 PARKING PLAN

7

About 30 bicycle spaces would be included in the basement garage.

Five freight loading spaces would be located as shown in Figure 6, page 15. Due to the nature of the trade mart there would be little loading on-site. (Loading requirements are discussed in detail in Section IV.C. Transportation, page 84 and 85).

A shuttle bus service would be provided to accommodate users of the mart who are staying at hotels or transferring to and from the Financial District or Moscone Center. There would be few walk-in visitors since access to the Mart would be limited and most use would be by appointment. The shuttle bus would stop in front of Building 2 on Second Street. The shuttle bus would serve the office project by connecting employees to other transit facilities such as Transbay Terminal.

2. Office Use Project

The office project would contain 443,000 gross square feet of space, excluding parking spaces (Table 1, page 18). Although uses would be mixed, the primary use would be office. There would be about 333,000 gross square feet of office space; 30,000 gross square feet of recreation/sports space; 40,000 gross square feet of computer/data processing space; 25,000 gross square feet of accessory retail space; and 15,000 gross square feet of storage space. The recreational space would consist of a health club or gym open to members only. Membership would not be restricted to employees of Second Street Square. The computer and retail space would be accessory uses, designed to support the major office functions.

3. High Technology Trade Mart

The High Technology Trade Mart represents a new type of facility for the expanding communications and information processing industries. The primary allocation of space would be for showrooms for high technology equipment and would be used for exhibitions, meetings, education and training activities and direct marketing to the business or professional users of semi-conductor hardware and software. The mart would offer a coordinating service for the electronic industries of the Pacific Basin in the form of a central location for display, financing and information dissemination for electronics.

The Trade Mart would be a place for major semi-conductor manufacturers to exhibit and demonstrate hardware and software packages with business and technical applications.

TABLE I

PROJECT CHARACTERISTICS

Office Building

Office	Recreation	Computer	Accessory Retail	Storage	Parking Provided
333,000 sq. ft.	30,000 sq. ft.	40,000 sq. ft.	25,000 sq. ft.	15,000 sq. ft.	298 Spaces

Trade Mart

Trade Mart	Accessory Office	Accessory Retail	Accessory Storage	Parking Provided
343,000 sq. ft.	60,000 sq. ft.	25,000 sq. ft.	15,000 sq. ft.	298 Spaces

The mart would not be open to the public and no carry-out sales would occur. Most equipment orders would be placed by the on-site sales representatives to the factory and from there to the customer's place of business.

The proposed mart would cater to a regional/national/international market and it is expected that many visitors would be from outside the Bay Area. The mart would normally be open Monday through Friday during regular business hours and there would be occasional night and weekend seminars. It is estimated that approximately ten large educational/sales seminars would be held per year targeted at particular user groups (e.g. hospital administrators) or a specific product (e.g. software for petrochemical engineers). The Trade Mart would also coordinate with national computer trade shows held at Moscone Center or Brooks Hall.

A total of 343,000 gross square feet would be devoted to exhibit/display area. The floor plan would permit approximately 100 to 150 companies to display, demonstrate and sell their equipment. Individual spaces could range generally from 2,000 square feet to 20,000 square feet allowing both small and large businesses to use the Trade Mart for regular displays or special exhibitions. A visitor control area would be located near the entrance to the showroom areas, which would assure security to the building and permit only official users to the mart.

Approximately 60,000 square feet would be allocated to office use available for attorneys, consultants, financial specialists, leasing activities and publications. In addition to exhibit and auxilliary offices uses, the Trade Mart would feature restaurants for Mart users and banking facilities characterized as accessory retail use. Approximately 25,000 square feet of space would be allocated to accessory retail use, the same as the office project. Both the office and Trade Mart projects would contain 15,000 square feet of storage.

Construction and renovation for the Trade Mart would begin in the fall of 1983 and would continue along the same schedule as for the proposed office project.

D. REQUIRED APPROVALS

The relocation of the pedestrian bridge would be reviewed by the Department of Public Works with advisory information provided by the Real Estate Department. A revocable encroachment permit would be required. The Department of City Planning would evaluate the permit for consistency with the policies and objectives of the Master Plan and the Board of Supervisors and the Mayor would have final approval authority.

A Conditional Use authorization would be required because the top two floors of the new construction exceed the bulk limit of the Planning Code. For either project, the project sponsor is also seeking Conditional Use authorization for a Planned Unit Development having parking spaces which do not meet the Planning Code requirement for independently accessible off-street parking. This is discussed further in Section IV.C., Transportation.

Certification of the Environmental Impact Report (EIR) by the City Planning Commission, following public review of the Draft EIR (DEIR) and responses to comments collected during the public review period, is the first step in processing the proposed project.

III. ENVIRONMENTAL SETTING

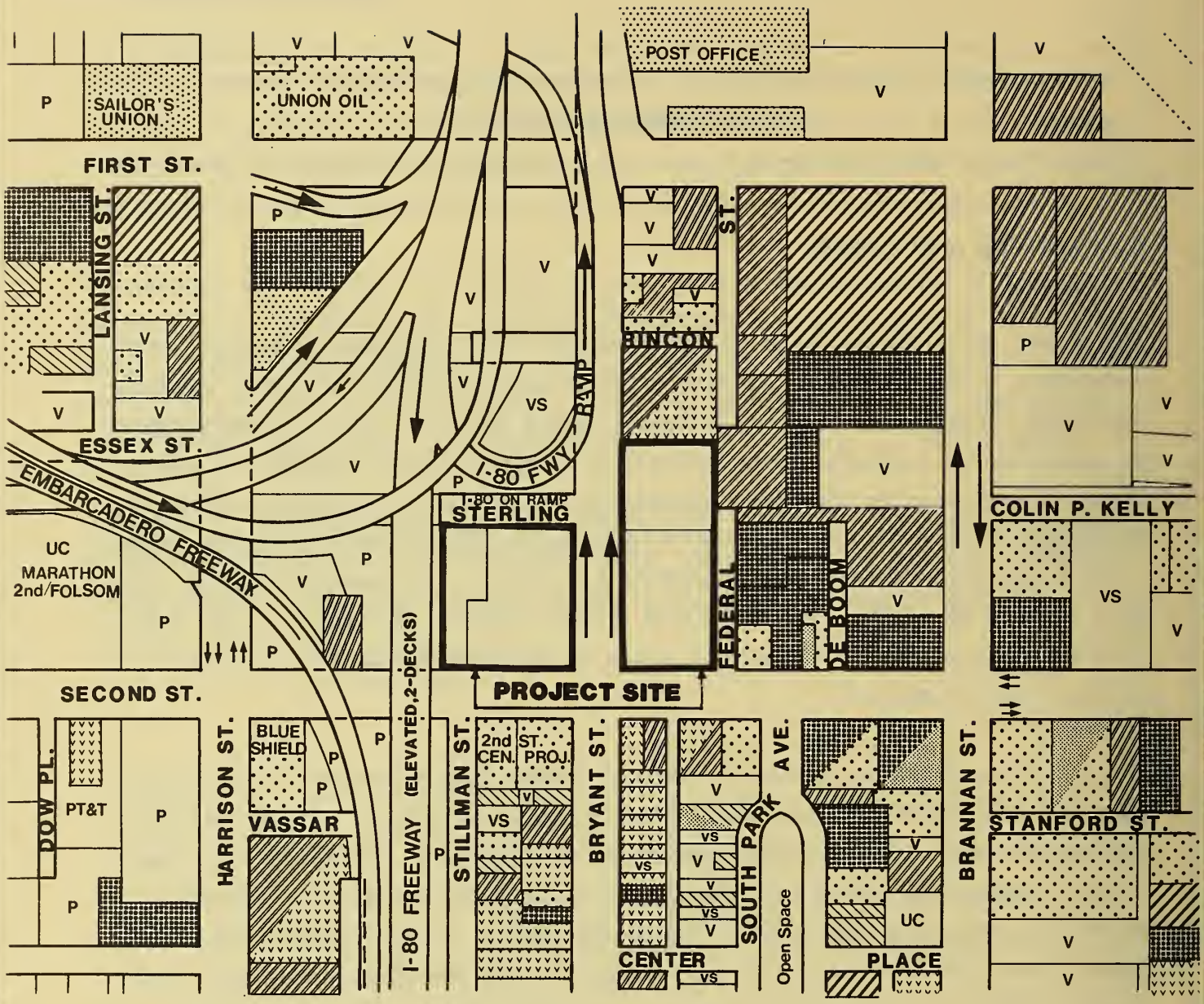
A. LAND USE AND ZONING

1. Land Use

The project site is located south of Market Street in an area characterized by vacant warehouses, small industries, existing offices, proposed office projects, wholesale businesses, parking lots and various services (Figure 8, page 22). The structures proposed for renovation are currently empty, having been vacated by the printing firm of Stecher, Traung & Schmidt in October 1982. Elevated freeway ramps run along the northern side of Buildings 1 and 2; the Sterling Street on-ramp curves around the east side of Buildings 1 and 2; and Bryant Street bisects Buildings 1-2 and 3-4. The existing buildings range from three to six stories. The clocktower is about 180 feet tall and is clearly visible from the freeway. Within a two-block radius of the site buildings vary from one to 15 stories (Figure 9, page 23).

The area bounded by First, Harrison, Third and Brannan Streets contains a wide range of uses, including residential, industrial, office and food processing. These uses often exist side-by-side, creating a thoroughly mixed-use community. Demand for office space in San Francisco has spread from the downtown core into the South of Market area. Major new projects in the vicinity include the Second Street Center project (under construction), 600 Harrison (under formal review), and Marathon/Second and Folsom (approved) (Figure 10, page 24). There are over 20 conversion projects in the area that already exist, are approved, are under construction, or are still under formal review (Figure 10).

There are two extensive development plans in the vicinity: the Rincon Hill Plan and the Rincon Point-South Beach Redevelopment Plan (Figure 10). The Rincon Hill Plan,[1] a joint effort of the University of California Housing Task Force and San Francisco Department of City Planning, would be largely residential (with 3,700-7,500 housing units) with offices and commercial/industrial uses forming a buffer between the Bay Bridge and the

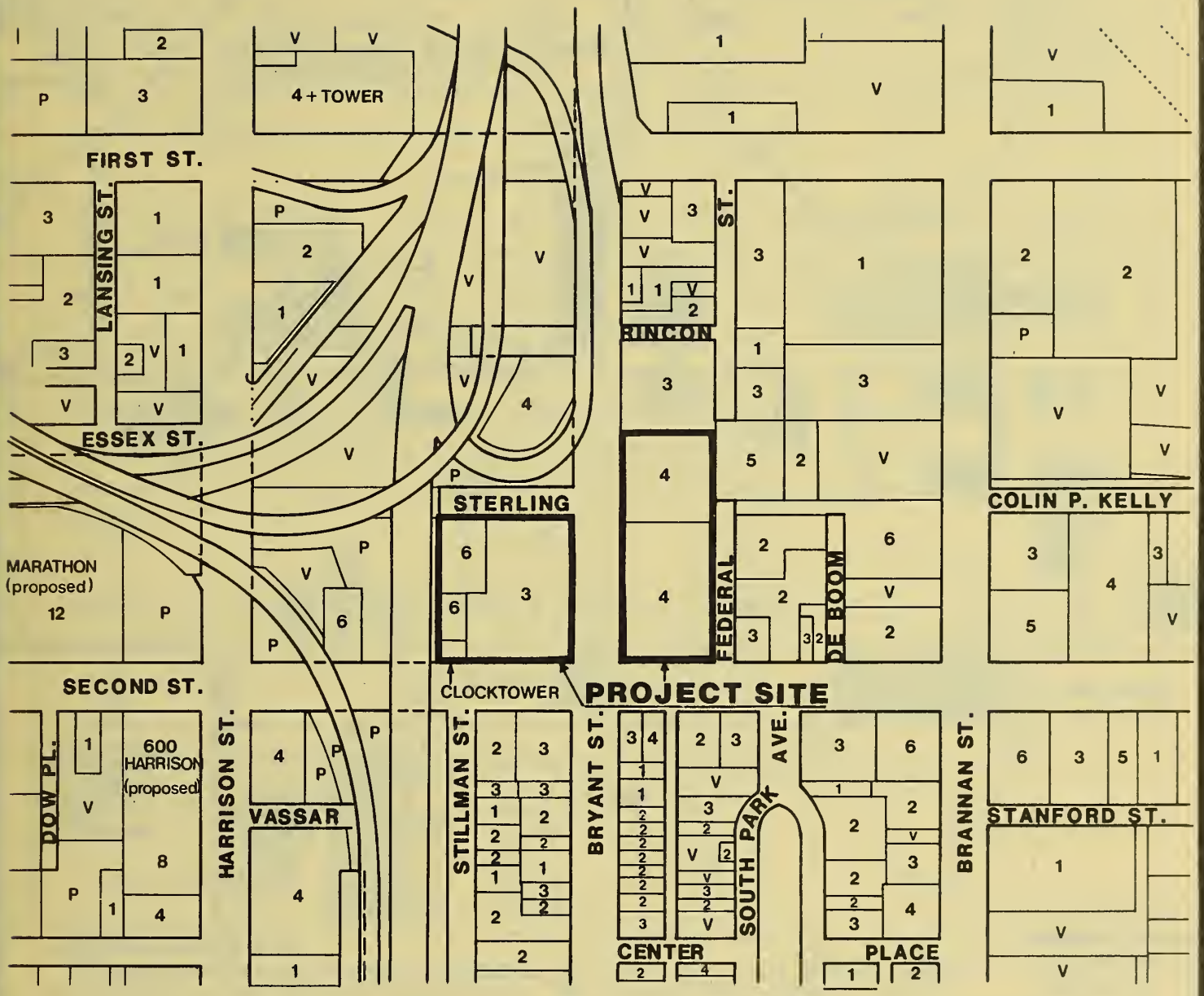


OFFICE
WHOLESALE/STORAGE
RETAIL
RESIDENTIAL
LIGHT MANUFACTURING
BUSINESS SERVICES (INCL LIGHT PRINTING)
AUTOMOTIVE (INCLUDES GAS STATIONS)
INSTITUTIONAL/RECREATIONAL
P PUBLIC PARKING
V VACANT LOT
VS VACANT STRUCTURE
UC UNDER CONSTRUCTION

Second Street Square

EXISTING LAND USE

8



3 NUMBERS INDICATE BUILDING HEIGHTS IN STORIES

P PARKING

V VACANT

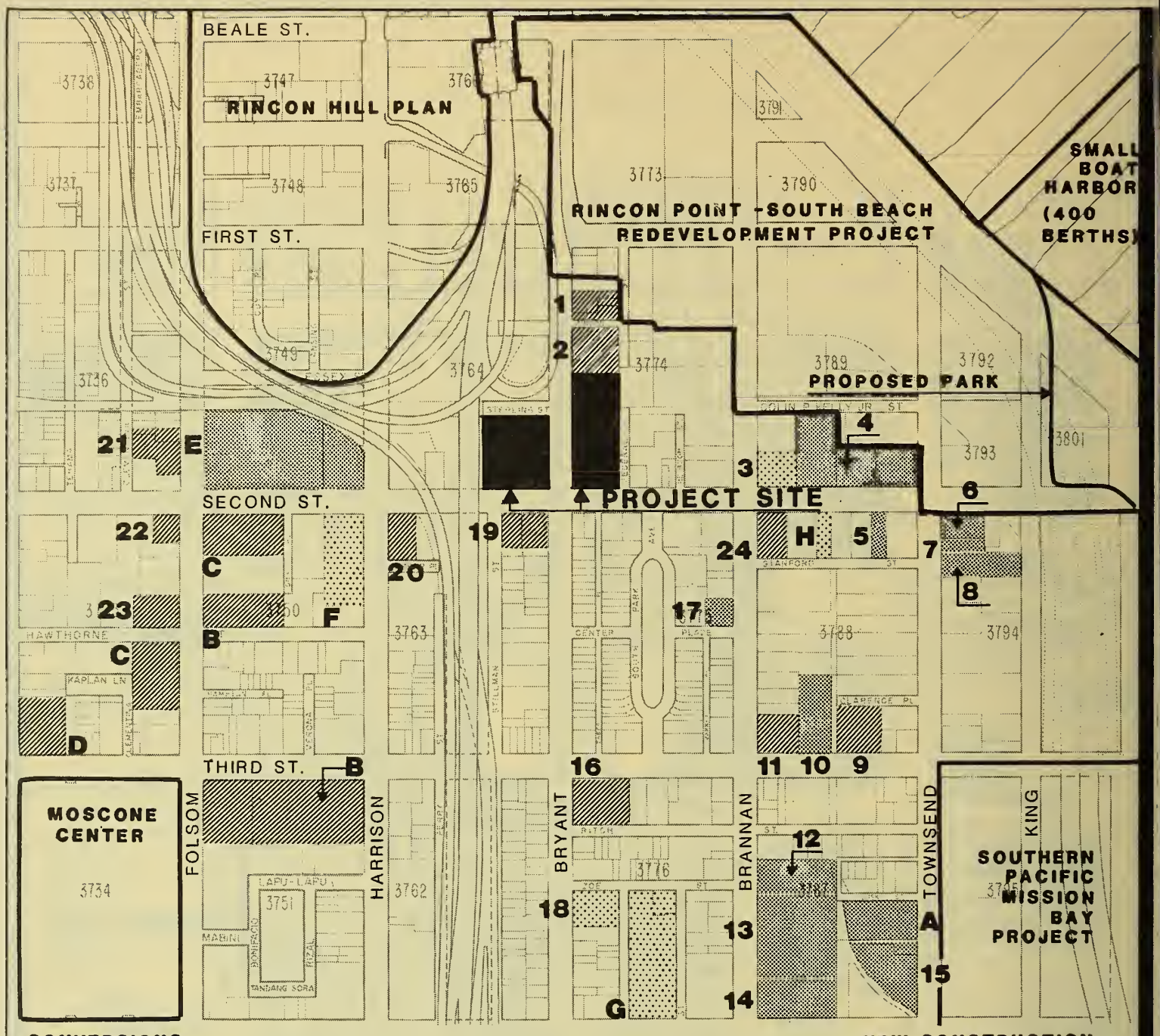
SCALE 0 200 400 FEET

SOURCE: EIP, APRIL 1983

Second Street Square

BUILDING HEIGHTS IN PROJECT VICINITY

9



CONVERSIONS

1. 325 BRYANT
2. 333 BRYANT
3. 615 2nd/BRANNAN
4. 2nd/BRANNAN
5. 690 2nd
6. 101-109 TOWNSEND
7. 111 TOWNSEND
8. 123 TOWNSEND
9. 665 3rd/MJB
10. 625 3RD
11. 601 3rd/WELLS FARGO BANK
12. 435 BRANNAN
13. 475 BRANNAN
14. 601 4th
15. 290 TOWNSEND
16. 3rd/BRYANT
17. 338-340 BRANNAN
18. 539 BRYANT
19. 2nd STREET CENTER
20. 400 2nd/BLUE SHIELD
21. 590 FOLSOM
22. 282 2nd
23. 95 HAWTHORNE
24. BANCROFT-WHITNEY BLDG.

NEW CONSTRUCTION

- **A.** 252 TOWNSEND
- **B.** ATT OFFICE COMPLEX
- **C.** PTT OFFICE COMPLEX
- **D.** CONVENTION PLAZA
- **E.** MARATHON/2nd AND FOLSOM
- **F.** 600 HARRISON
- **G.** WELSH COMMONS
- **H.** 640 2nd

PROJECT UNDER FORMAL REVIEW

PROJECT APPROVED

PROJECT UNDER CONSTRUCTION

COMPLETED PROJECTS

SOURCE: EIP

SCALE 0 500 1000 FEET

Second Street Square

PROJECT ACTIVITY IN THE VICINITY 10

freeways. Resolution #9303 supporting the Rincon Hill Plan was adopted by the City Planning Commission on February 11, 1982. The Rincon Point-South Beach Redevelopment Plan[2] was developed by the San Francisco Redevelopment Agency and adopted and approved January 5, 1981. A small boat harbor, major park, commercial uses, and mixed-income housing (with between 1,900 and 2,500 units) are planned.

Several of the adjacent warehouses have been converted to multi-tenant office space. Others have leased whole floors to various wholesale users such as import businesses and office suppliers. Smaller printing firms (15-20 employees) are active, particularly in the block bounded by Second, Stillman, Third and Bryant Streets. About six photo labs operate on the block bounded by Second Street, Third Street, South Park Avenue and Bryant. Machine shops, automotive uses, food processing, and garment manufacturing constitute other industries in the area. Architects, craftsmen and professional offices occupy some of the smaller structures in South Park and along Bryant and Brannan Streets.

Most of the vacant land in the area is unsuitable as open space since it is under or connected to the freeway. South Park is the only public park in the project vicinity. At one time South Park was a residential neighborhood built around a green park in the English tradition. Surrounding industrial uses have been locating on this block and many of the residential structures are either vacant or have been converted to commercial and business uses.

2. Economic Trends

South of Market: A Plan for San Francisco's Last Frontier, a report by SPUR, explores the economic trends that have contributed to office growth in San Francisco and the decline of manufacturing and trade. It notes that "between 1970 and 1980, San Francisco lost 6,200 manufacturing jobs and gained at least 30,000 office jobs."[3]

In recent years the South of Market area,[4] and more generally San Francisco's industrial lands have experienced encroachment by the rapidly growing office and commercial uses.[5] The strong office demand, coupled with major non-industrial developments such as Yerba Buena Center, has caused building and land values to escalate. Estimated land values near the proposed project have increased over 300% in the last five years.[6]

The buildings occupying the project site have recently become vacant but housed a printing firm for many years. Employment in the printing industry in San Francisco has declined by 16.8% from 1970 to 1980.[7] Printing businesses currently employ 14% of the City's industrial workers (see Table 2, page 27). To assess the impacts of converting the uses at the project site from printing to office/trade mart, this section describes the trends in the City's industrial sectors, particularly in the area surrounding the project site.

San Francisco has experienced a recent phenomenon which is well documented nationwide: the movement of manufacturing activities from central cities into outlying areas. In George Sternlieb and James Hughes' article "The Changing Demography of the Central City,"[8] several explanations for this trend are presented. These explanations fall into two general categories: shifting labor force markets and changing industrial land use patterns. Historically, the central cities provided a large, diversely skilled labor force necessary for the development of mass production industry. Since World War II, an increasing number of skilled workers have moved to suburban areas and many businesses have followed their lead. In addition, many industries are relocating to other parts of the United States and the world, partially because of lower labor costs. Aside from the issue of regional and national redistribution of industrial jobs, the nation as a whole is losing manufacturing jobs.

The redistribution and decreasing number of industrial jobs encouraged by labor force changes in the United States is supplemented by modern industrial technology. New technology makes it more advantageous to be located on large lots. Modern technology emphasizes integrated assembly processes, increasingly automated, that can be more efficiently laid out on single levels; that is, it is not necessary to lift materials and products in process to upper levels to complete manufacture. This allows continuous single-story systems rather than obsolete multi-storied segmented systems. Lower land costs and modern roadway and infrastructure facilities make outlying areas attractive to industry. For these reasons, many older central cities of the United States have experienced declining industrial employment. As shown in Table 2, San Francisco has shared in this national trend with a 7.8% decline in industrial jobs from 1970 to 1980, compared to an overall 22% increase in total employment in the City.

The San Francisco Bay Area printing sector is typical in many ways of this general decentralizing trend. Between 1970 and 1980 the number of printing and publishing jobs in

TABLE 2

NUMBER OF FIRMS AND EMPLOYEES IN SAN FRANCISCO

(1970 and 1980)

	1970	1980	% Change 1970-1980
All S.F. Establishments			
Number of firms	20,928	24,371	+ 16.5
Number of employees	401,863	490,491	+ 22.0
S.F. Industrial Establishments			
Number of firms	2,038	1,898	- 6.9
Number of employees	69,785	64,310	- 7.8
S.F. Printing Establishments			
Number of firms	393	389	- 1.0
Number of employees	10,874	9,041	- 16.8

Source: U.S. Bureau of the Census, County Business Patterns: California, CBP-80-6, July 1982 and County Business Patterns: California, CBP-70-6, July 1972.

six Bay Area counties increased by almost 17%, yet San Francisco experienced a 17% decline in the number of printing related jobs. The most significant increases were in Contra Costa, Marin and Santa Clara counties (see Table 3, page 29).

Managers of printing firms in the City attribute this shift chiefly to increased pressure on land values and rents, obsolete buildings, lack of off-street loading space and other causes including high labor costs, high City business taxes and state sales taxes, the need of some firms for larger structures capable of supporting continuous processes, and increased competition from firms in cities such as Los Angeles, Reno and Portland.[9]

Within San Francisco, the distribution of firms in the printing and publishing sector is shifting toward the South of Market area, particularly the area east of Sixth Street and south of Folsom which includes the project site. Smaller printing firms are proliferating in this area, probably due to attrition of larger firms, reduction of employees from existing firms and the establishment of new business locations in the area while firms in other industrial sectors are consolidating in larger spaces. During the past decade the number of printing and publishing firms with ten or fewer employees increased 5% to 10% in the project area and as much as 100% farther south.[10] The number of industrial firms in all sectors occupying more than 10,000 square feet (employing generally more than ten workers) declined 6.3% over the last half of the decade while the amount of space occupied by firms in this size category actually increased 300,000 square feet.[11] What appears to be occurring is both a consolidation of larger, established firms which require more modern space and facilites, and a shift to smaller, more service-oriented firms. These data suggest that industrial activity is still a viable land use in some areas of San Francisco.

3. Relationship to Master Plan

Objectives and policies of the Commerce and Industry Element and Land Use Element relate to Second Street Square. From the Commerce and Industry Element the following policies are applicable:[12]

> Objective 1, Policy 1: "Encourage development which provides substantial net benefits and minimizes undesirable consequences."

TABLE 3

PRINTING EMPLOYMENT CHANGES 1970-1980
Selected California Counties

Region	1970 No. of Employees	1970 No. of Firms	1980 No. of Employees	1980 No. of Firms	1970-1980 % Change No. of Employees	1970-1980 % Change No. of Firms
California	90,472	3,719 (100%)	120,431	5,293 (100%)	+33.1	+42.3
San Francisco	10,874	393 (10.6)	9,041	389 (7.3)	-16.8	-1.0
Alameda	4,429	171 (4.6)	5,282	249 (4.7)	+19.3	+45.6
Contra Costa	1,148	46 (1.2)	2,319	86 (1.6)	+102.0	+87.0
Marin	409	29 (0.8)	804	63 (1.2)	+96.6	+117.2
San Mateo	2,517	90 (2.4)	3,668	147 (2.8)	+45.7	+63.3
Santa Clara	4,569	161 (4.3)	6,807	301 (5.7)	+50.0	+87.0
Los Angeles	42,528	1,809 (48.6)	51,226	2,110 (39.9)	+ 2.0	+16.6
Orange	5,916	180 (4.8)	11,035	543 (10.3)	+86.5	+201.7
San Francisco Vicinity	23,946	890	27,921	1,235	+16.6	+38.7

Source: U.S. Bureau of the Census, County Business Patterns: 1980, California, CPB-80-6, July 1982 and County Business Patterns: 1970.

Benefits and consequences of Second Street Square are discussed under specific headings in the impacts section, i.e. Employment and Transportation, pages 50 and 65, respectively.

> Objective 2, Policy 1: "Seek to retain existing commercial and industrial activity and to attract new such activity to the City."

Either of the proposed projects would cumulatively contribute to new and proposed development occurring in the South of Market area. Although no existing commercial or industrial activity would be retained, as the structures have been vacant for over a year, the attraction of commercial activity would be achieved by the implementation of the project.

> Objective 4, Policy 11: "Maintain an adequate supply of space appropriate to the needs of incubator industries. Examples of "incubator" type industries include electronic data processing firms, business services, apparel manufacturing, and design, crafts manufacturing, etc. Larger, older buildings with storage and loft space are particularly valuable. The South of Market area is currently serving as a functional area containing a supply of such spaces needed by new businesses. The maintenance of a reservoir of such spaces, which can fulfill these needs is needed."

The proposed project would present space opportunities for office support sectors (such as filing or computing facilities), trade mart-type operations, or for "incubator" companies requiring large spaces and less labor intensive secondary uses.

> Objective 4, Policy 5: "Avoid encroachment of incompatible land uses on viable industrial activity."

Although it would remove existing floor space from potential industrial uses, the proposed project (office or mart) would not displace any existing industrial land uses.

> Objective 6, Policy 2: "Guide location of office development to maintain a compact downtown core so as to minimize displacement of other viable uses."

Second Street, in the vicinity of the proposed project, is emerging as a secondary office

development corridor. Despite the development pattern along Second Street, the proposed project would not respond to the policy stated above.

The Land Use Element of the Comprehensive Plan[13] contains a set of objectives to guide land use for the City. For commercial and industrial sections of the City, they encourage the improvement of commerce and industry through the orderly production exchange and balance of goods and services and through accommodation of a variety of activities while protecting and enhancing the economic, social, cultural and aesthetic values of the City.

The objectives of the Land Use Element are intentionally general and rely on the City Planning Code for a clearer delineation of what types of activities are appropriate and compatible within each zoning district.

The land use map on page 8 of the Element indicates the project site falls in a Light Industrial section of the City, or an M-1 (Light Industrial) district under the City Planning Code. As discussed below, M-1 districts are acknowledged as appropriate areas for light industrial activity. However, such designation does not preclude office development, which is also a permitted use.

4. Zoning

The project site is in an M-1 (Light Industrial) district as shown in Figure 11, page 32. Professional and business offices, retail business or personal service establishments, automotive sales and service, repair garages, parking lots and garages, wholesaling, storage and light manufacturing are principal permitted uses in this district.[14]

The applicable height and bulk district for the site is 105-F, which allows a building height of up to 105 feet. The maximum dimensions of an "F" bulk district allow full site coverage up to 80 feet in height. Between 80 feet and the 105-foot height limit the maximum building length is 110 feet and the maximum diagonal dimension is 140 feet.

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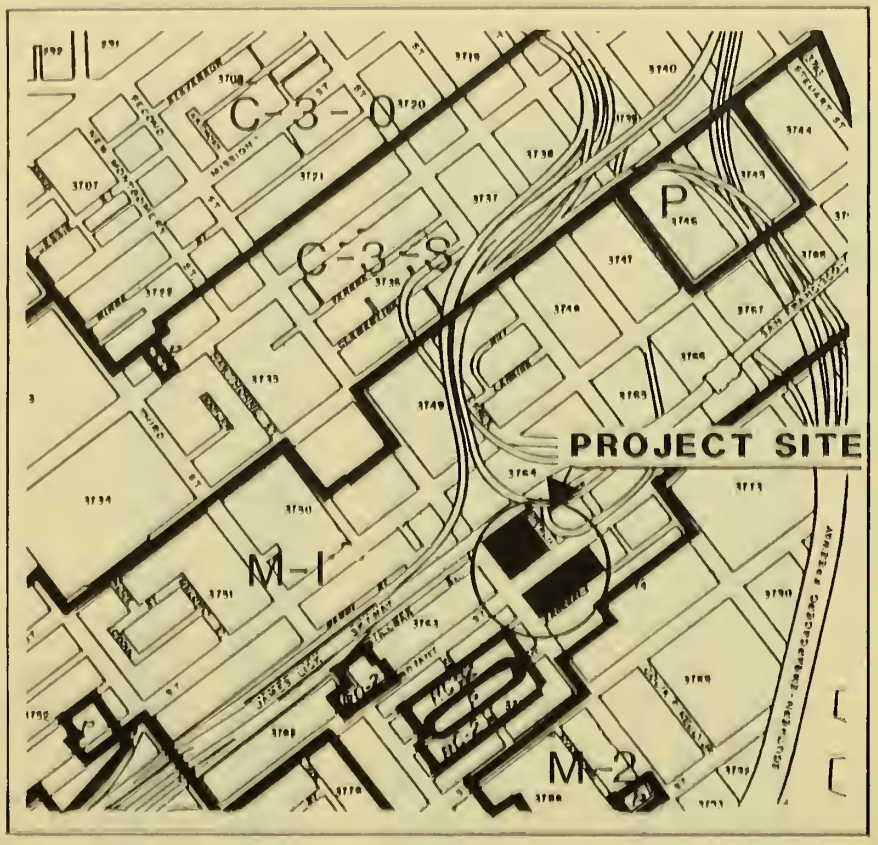
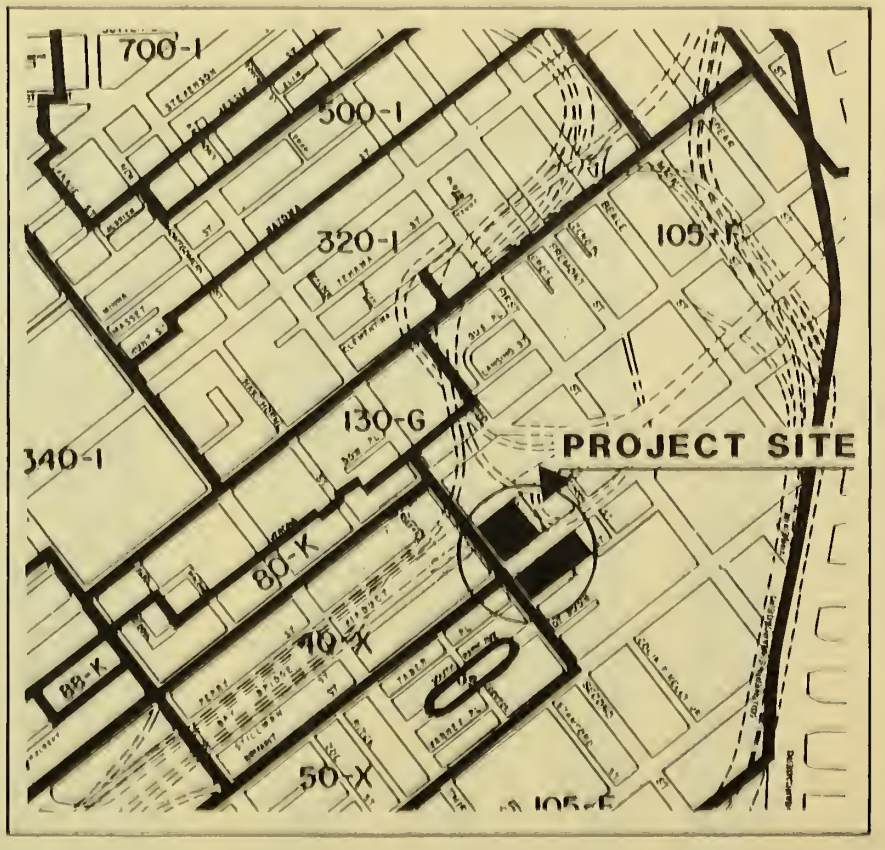
[1]University of California Housing Task Force and San Francisco Department of City Planning, Rincon Hill: A Plan for Urban Transformation, November 1981.

[2]San Francisco Redevelopment Agency, Rincon Point - South Beach Redevelopment Plan, adopted and approved by the Board of Supervisors of the City and County of San Francisco, Ordinance No. 14-81, January 5, 1981.





ZONING DISTRICTS:

C-3-O	COMMERCIAL DISTRICTS	M-1	INDUSTRIAL DISTRICTS
C-3-S	COMMERCIAL DISTRICTS	M-2	INDUSTRIAL DISTRICTS
RC-2	RESIDENTIAL-COMMERCIAL COMBINED DISTRICTS	P	PUBLIC DISTRICTS
		OS	OPEN SPACE DISTRICT

SOURCE: SAN FRANCISCO PLANNING CODE

HEIGHT LIMIT (feet)	BULK DISTRICT	HEIGHT ABOVE WHICH MAXIMUM DIMENSIONS APPLY (feet)	MAXIMUM PLAN DIMENSIONS (feet)	
			LENGTH	DIAGONAL DIMENSION
150	F	80	110	140
130	G	80	170	200
320	I	150	170	200
80	K	60	250	300

SCALE 0 400 800 1600 FEET

Second Street Square

ZONING/HEIGHT AND BULK DISTRICTS

11

[3]SPUR, South of Market: A Plan for San Francisco's Last Frontier, June 1981, pages 17 and 66.

[4]The South of Market area is bounded generally by The Embarcadero, Townsend Street, the Central Skyway, Mission Street (from South Van Ness to Fourth Street) and Folsom Street (from Fourth Street to The Embarcadero). Dean Macris, Director of Planning, San Francisco Department of City Planning, Memo Regarding South of Market Interim Controls, January 26, 1982, page 4.

[5]Dean Macris, Memo Regarding South of Market Interim Controls, January 26, 1982.

[6]San Francisco Department of City Planning, Final EIR Second and Folsom Project, EE 81.18, certified April 22, 1982, page 30a.

[7]U.S. Bureau of the Census, County Business Patterns: California, CBP-70-6, July 1972, County Business Patterns: California, CBP-80-6, July 1982.

[8]George Sternlieb and James W. Hughes, "The Changing Demography of the Central City," Scientific American, Vol. 243, No. 2, August 1980, pages 48-54.

[9]Gerald Adams, "An Exodus of Printers," San Francisco Examiner, January 20, 1982, page ZA1.

[10]Tabulation of firms listed in Contacts Influential, by Influential Contacts, Ltd., San Francisco, for 1970 and 1980 suggest the area bounded generally by the James Lick Freeway, Army Street and the waterfront experienced a 100% increase in printing and publishing firms, while the area between the freeway and Market Street and east of Third had a more modest increase of 5% - 10%. Virtually all of this increase occurred among firms of ten employees or less.

[11]Letter from Thomas Tabor, Coldwell Banker, Inc. to Barbara Morrison, Economic Development Council, Office of the Mayor, June 19, 1981.

[12]San Francisco Department of City Planning, Commerce and Industry Element Policies and Objectives, adopted by the City Planning Commission, Resolution 8001, June 29, 1978, pages 6, 8, 17.

[13]San Francisco Department of City Planning, Land Use Section of the Master Plan, page 5 and Plate 1.

[14]City and County of San Francisco, Planning Code, Sections 213-227, 1979 ed.

B. EMPLOYMENT, HOUSING AND FISCAL FACTORS

1. Employment

The buildings occupying the project site have recently become vacant after housing a printing firm for many years. This firm had a peak employment of 625, but by the spring of 1982 when it vacated the premises, it employed 350 persons.

Various surveys of C-3-0 office space indicate that the vacancy rate for office space in the downtown has increased in the past two years from 0.1% to about 5.8%.[1] The citywide office vacancy rate was 3.69% in July 1982 and appears to have continued to rise.[2] Over the previous five years the office vacancy rate citywide fell dramatically, so the 1981-83 trend represents a change in the market.[2] This change may in fact be a result of the nationwide recession that has restricted demand; it also reflects the additional supply of space constructed in recent years.

About 15.4 million square feet of office space are currently proposed or under construction but not occupied in San Francisco. Of this space, 4.1 million is still under formal review, 5.2 million has been approved and an additional 6.1 million is under construction. An additional 3.0 million square feet have been completed but are not fully occupied. Table D-1 in Appendix D, page A-54, shows the specific projects which are included in these numbers. The absorption rate for such space during the past five years has been in excess of 1.5 million square feet per year.

2. Housing Supply

There are about 322,000 housing units in San Francisco, according to the 1980 census. About two thirds of the stock is rented and one third is owner-occupied. Housing production in the City (as measured by building permits issued) has been predominantly multi-family housing. Between 1978 and 1980, 84% to 87% of residential building permits were for multi-family housing and in 1981 that figure increased to 95%.[3]

The nature of the multi-family housing stock (including townhouses, condominiums and apartments) in the City is changing because of conversion of rental units to condominiums and conversion of residential hotels to other uses. Under the Subdivision Code as revised in 1982, the City allows conversion of 200 units of rental housing to condominiums per year. In 1981, about 40% of rental units converted to condominiums were estimated to be

owner-occupied.[4] It is further estimated that from 1975 to 1980, approximately 3,700 residential hotel units were demolished or converted to commercial or tourist uses.[5]

There are a number of indications that housing demand in San Francisco has heightened over the past decade. The number of households increased by 1.3% from 1970 to 1980 despite a 5.6% decrease in total population. This reflects a decrease in the size of households in San Francisco from 2.34 persons to 2.19 persons, which is a trend typical of many areas during this time.[6] Although the number of housing units in the City increased by 1.9% over this period, by 1980 the vacancy rate, which indicates the balance between housing supply and demand, remained low at 0.56% for owner-occupied housing and 2.68% for rental housing.[7]

The percentage of San Francisco's employed population that works in the City has decreased from more than 80% in 1970 to 75% in 1980. This suggests that fewer people who are finding work in the City are also finding housing here. However, the number of San Francisco residents working in the Financial, Insurance and Real Estate (FIRE) sector increased during this period by more than 6,000. This represents about 33% of the total increase for jobs in this sector of the City.[8] The Department of City Planning projects that as many as 40% of office workers would desire to move to San Francisco upon finding work in the City.

The expansion of downtown office space is one of the main sources of pressure on San Francisco's housing demand. There are also regional housing impacts. There were just over two million housing units in the nine-county Bay Area in 1980. About one third of the units are in the East Bay (Alameda and Contra Costa counties), about one third on the Peninsula (San Mateo and Santa Clara counties) about 16% percent in San Francisco, 10% in the North Bay (Marin and Sonoma counties) and 6% in Solano and Napa counties.[9]

The limited information available on housing production in the Bay Area counties suggests that the markets have been depressed in recent years. Regionally, single-family permits declined in 1979, 1980 and 1981. Alameda, Contra Costa, San Francisco, San Mateo and Sonoma county single-family permit issuances rose from 1978 to 1979, but then declined in 1980. Regional multi-family rental unit permits have declined every year between 1977 and 1981. Conversely, condominium permits increased between 1977 and 1980 and then decreased in 1981.[10]

3. Fiscal

The current assessed value of the project site (Block 3764, Lot 70, and Block 3774, Lots 54, 55) is about $9,400,000. At the 1982-83 tax rate of $1.17 per 1% of assessed value, the site generates $110,000 in property tax revenues.[11]

When the project site was occupied, additional revenues and costs were generated for the City and County of San Francisco. Sufficient information is not available to precisely estimate the level of the fiscal impact of the previous uses. However, assuming the 350 workers had similar purchasing characteristics as office workers, approximate estimates can be made.[12] The revenues are summarized below.

Payroll Tax[13]

350 workers x $23,000 average salary x 1.5% tax = $120,750

Utility Users Taxes

Electricity: 3,094,000 kwh x $0.075 rate x $0.05 tax = 11,600

Gas: 100,000 therms x $0.5665 rate x $0.05 tax = $2,800

Water: (182,000 cubic feet water x $0.00414 rate) +
(182,000 cubic feet sewage x $0.0115 rate) x $0.05 tax = $140

Telephone: $300 annual usage x 350 employees x $0.05 tax = $5,250

Total utility users tax = $19,790

Sales Tax

350 employees x $1,287 expenditure per employee x 1.25% tax = $5,600

The $5,600 would be paid to San Francisco. The MTC also levies a 0.5% tax for transit operators, which is estimated at $2,250.

The estimated total revenues from the former use was $278,000.

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[1] Coldwell Banker, Downtown Office Market Overview, First Quarter 1983. This source provides downtown office vacancy rate only.

[2]BOMA of San Francisco, The BOMA Newsletter, July 8, 1982. This source provides citywide office vacancy rates.

[3]ABAG, San Francisco Bay Area Housing Activity Report, No. 4, May 1982, page 21.

[4]San Francisco Department of City Planning, Condominium Research, Preliminary Progress Report, December 1981.

[5]San Francisco Department of City Planning, A Study of the Conversion and Demolition of Residential Hotel Units, December 1980, page 17.

[6]Department of City Planning, Statistical Update on Citywide Office Development, May 1, 1981.

[7]U.S. Bureau of the Census, 1980 Census Information, File STF 1-A, Report #4, March 1982, Tables 25 and 26.

[8]U.S. Bureau of the Census, Population Census 1970 and 1980, and County Business Patterns 1970 and 1980.

[9]Real Estate Research Council of Northern California, Northern California Real Estate Report, Vol. 33, No. 1, April 1981. Updated to October 1982 per James Davis, Executive Director, telephone conversation, December 28, 1982.

[10]ABAG, San Francisco Bay Area Housing Activity Report, No. 4, May 1982.

[11]Of the total tax, $94,000 represents the maximum allowable under Proposition 13 for general governmental expenditures, and $16,000 was levied to finance bond obligations previously approved by the electorate (1% plus 0.17% of assessed valuation).

[12]The methodology for these estimates is explained in section IV.B., page 56 of this EIR.

[13]Annual salary for printing workers derived for Downtown EIR Consultant Report, vol. 1, page IV.C.15.

C. TRANSPORTATION

As outlined on Figure 12, page 39, the project site is served by a grid network of local streets. In the site vicinity, Second, Third, Howard, Folsom, Harrison, and Bryant (west of Second) Streets provide primary local access to and from the project area. All of these streets are designated "Primary Vehicular Streets" in the Downtown Transportation Element of the City's Comprehensive Plan.[1]

Regional access to and from the Peninsula is available via I-80 on- and off-ramps at Fourth/Harrison and Fourth/Bryant. For travel to and from the East Bay, a Bay Bridge off-ramp is located at Harrison/Fremont while on-ramps are located at Harrison/First, Harrison/Essex, and Bryant/Sterling. The Bryant/Sterling ramp, located directly adjacent to the project, has been designated for carpool and truck use only during the 3-7 p.m. commute period.

The City's Comprehensive Plan designates Brannan Street as a Bicycle Route in the project area. There have not been any improvements (such as striping of bicycle lanes) on Brannan.

The project site is within walking distance (appproximately one-quarter mile or two to three blocks) of 10 Muni lines and 16 Golden Gate Transit routes. With a slightly longer (four to five block) walk or a connecting trip on Muni, the project would have access to BART, AC Transit, SamTrans, and Southern Pacific. The various transit services are shown on Figure 13, page 40.

Adjacent to the project site, sidewalk widths are 10 feet on Second Street and 15 feet on Bryant Street. These widths correspond to the width designated by the City's Department of Public Works. The effective sidewalk widths (space available for pedestrian flow, accounting for obstructions such as poles, planters, etc.) are about seven feet on Second Street south of Bryant, six feet on Second Street north of Bryant and ten feet on both sides of Bryant Street.

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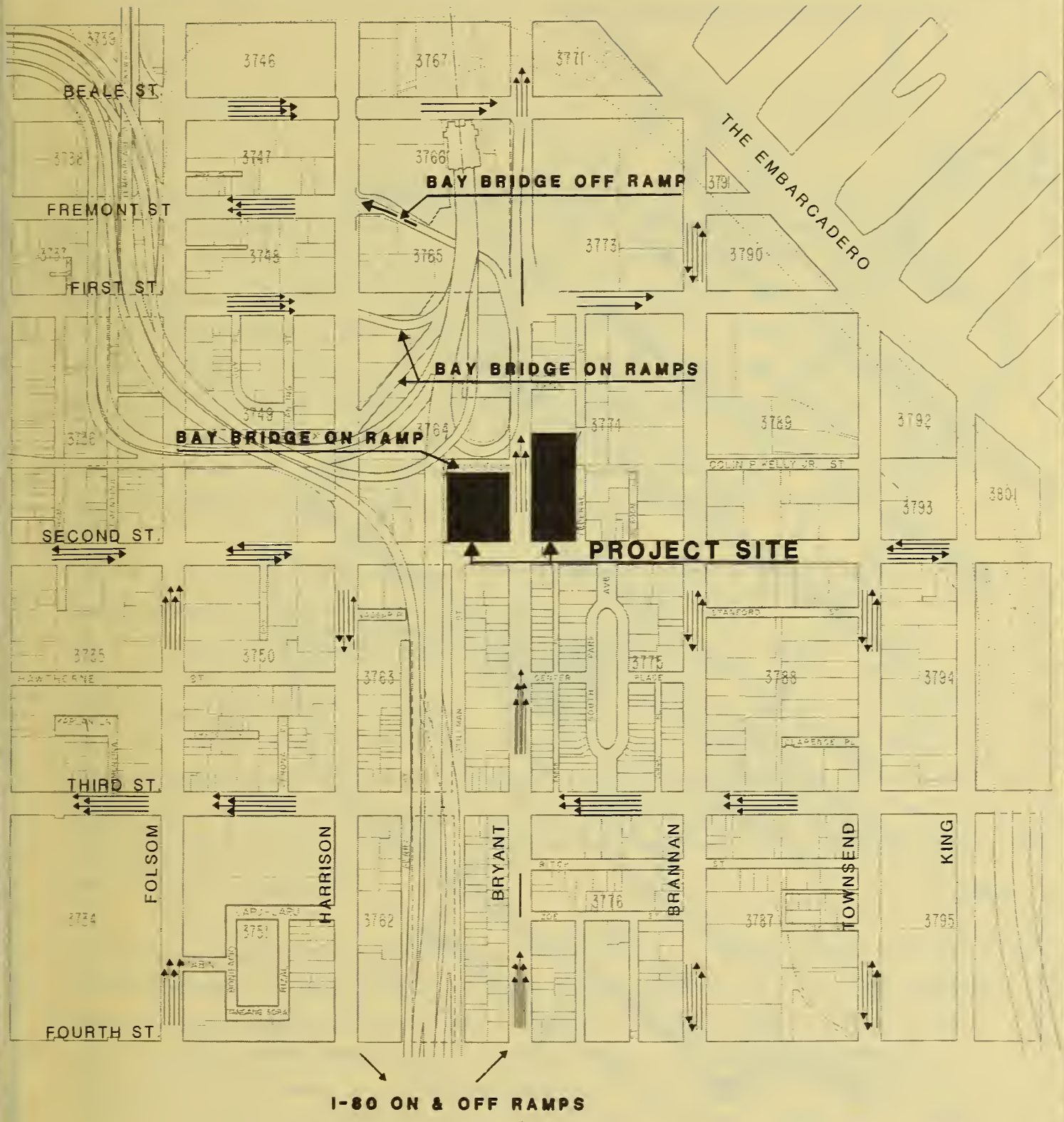
[1] Major Thoroughfare: a cross-town street whose primary function is to link districts within the City and to distribute traffic from and to the freeways; a route generally of city-wide significance. Defined in the Thoroughfare Plan of the Transportation Element of the San Francisco Comprehensive Plan.

[2] Field review by EIP Corporation on January 13, 1982.

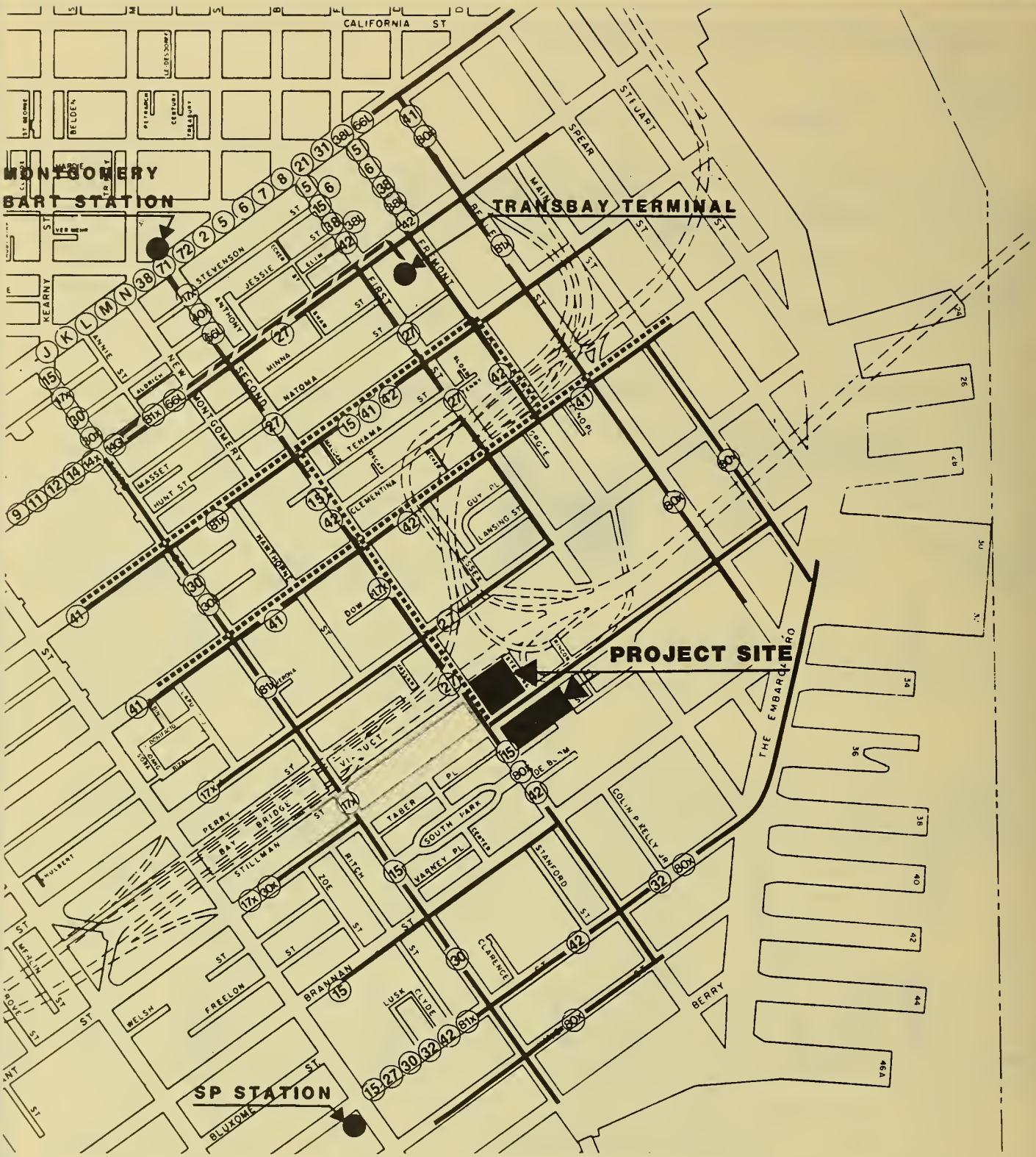


SCALE 0 500 1000 FEET

SOURCE: EIP

Second Street Square

STREET NETWORK – **12**



(5) MUNI ROUTE

GOLDEN GATE TRANSIT

SAMTRANS SERVICE

SOURCE: EIP

SCALE 0 500 1000 FEET

Second Street Square

TRANSIT

13

D. AIR QUALITY

1. Setting

San Francisco's persistent summer winds and its upwind position with respect to major pollutant sources continue to give it relatively clean air compared with other parts of the Bay Area. Nevertheless there are periods, most often in fall and winter, when low winds and temperature inversions cause atmospheric stagnation. At such times pollutant concentrations, especially carbon monoxide (CO) near heavily traveled streets, become elevated in much of the Bay Area. On particularly sunny days in the summer and early fall portions of the Bay Area experience elevated concentrations of ozone, a pollutant which is formed in the atmosphere over a period of several hours. Under these conditions pollutants which are emitted in San Francisco may increase ozone concentrations in downwind areas even while ozone levels in San Francisco itself are not elevated.

The Bay Area Air Quality Management District operates a network of permanently placed monitoring stations in the Bay Area. It also performs special studies of local areas where there is a potential for violations of the CO air quality standard. The permanent monitoring station is located in the southeastern portion of San Francisco at 900 Twenty-third Street. Special studies have been performed at Washington and Battery Streets in 1979-1980 and at 474 Geary and 100 Harrison Street in 1981-1982. Monitoring data from these stations is presented in Table 4, page 42. The data indicate that violations of the federal 8-hour average CO standard have occurred in downtown San Francisco between 1979 and 1981. In 1980 and 1981 other measured pollutants were all below the standards (see Appendix F, page A-66).

A general improving trend in air quality has been occurring in the San Francisco area over the past decade. In 1982, the most recent full year of monitoring at the Twenty-third Street site, no violations of any air quality standard occurred in San Francisco (violations were measured at the Geary Street site in January). Although several factors have contributed to this trend, one of the most important is the effect of ongoing state and federal regulations controlling emissions from motor vehicles. Based upon existing regulations, further improvements are expected. If existing regulations are altered, the rate of improvement would be changed.

Because state and federal standards are not met for the entire Bay Area it has been designated by the U.S. Environmental Protection Agency, as a "non-attainment" area for

CO, ozone, and total suspended particulates (TSP). The Association of Bay Area Governments (ABAG) and other government agencies have prepared the 1979 Bay Area Air Quality Plan,[1] updated by the 1982 Bay Area Air Quality Plan,[2] which is the Air Quality Maintenance Plan (AQMP) for the Bay Area. The Plan includes measures to reduce emissions from both stationary sources and motor vehicles to levels which will result in attainment of air quality standards originally by 1982, but now, with appropriate extensions, by 1987.

Winds in San Francisco are generally from a westerly direction and are persistent from May to August. During the rainy season (October to April) the strongest winds flow from the south as well as the west and northwest.

TABLE 4

MAXIMUM CO VALUES RECORDED AT HOTSPOTS DURING 1979/1980 and 1980/1981 SAN FRANCISCO HOTSPOT MONITORING PROGRAMS

	Maximum CO Values (ppm)	
1979/1980	1-hr average[1]	8-hr average[2]
Battery/Washington	15	11
1980/1981		
474 Geary Boulevard	15	11.5
100 Harrison, 1st Floor	13	7.75
100 Harrison, 5th floor	10	5.62

[1] One-hour CO standard: federal, 20; state, none.

[2] Eight-hour CO standard: federal, 9; state, none.

Source: Association of Bay Area Governments, Air Quality Planning Program, Air Quality Tech Memos 33 and 40, Berkeley, California, June 1980 and January 1982.

[1] ABAG, 1979 Bay Area Air Quality Plan, January 1979.

[2] ABAG, 1982 Bay Area Air Quality Plan, December 1982.

E. ENERGY

On-site energy consumption in 1981 for the project site (printing operating at partial capacity) totaled 3,094,000 kilowatt hours of electricity and 9,713,000 cubic feet of natural gas. This is equivalent to about 41 billion BTU of energy which is the amount of energy contained in about 7,400 barrels of oil. This energy was used for heating, cooling, ventilation, lighting, service water heating, operation of machinery for printing and operation of other equipment and appliances. The electricity which is supplied by PG&E is generated from oil, gas, hydroelectric power, geothermal energy, nuclear power, and small amounts of wind power, solid waste and cogeneration.

IV. ENVIRONMENTAL IMPACTS

An Initial Study of the proposed project was published February 25, 1983, and a determination was made that an Environmental Impact Report (EIR) was required. Issues that were considered to require no further discussion as a result of the Initial Study are: Visual Quality and Urban Design; Noise; Construction-related Air Quality and Shadows; Utilities and Public Services; Biology; Geology/Topology; Water; Hazards; and Cultural and Historic factors. For a discussion of these issues refer to the Initial Study, incorporated herein as Appendix A, page A-1. Not all of the impacts discussed in this section are physical environmental effects as defined by the California Environmental Quality Act (CEQA). Employment, housing and fiscal factors are included here for informational purposes only.

A. LAND USE AND ZONING

The Second Street Square office project would contain office, retail and recreational/sports space totalling approximately 443,000 gross square feet (gsf). The project site currently contains 383,000 gsf of vacant manufacturing space which would be converted to office uses. The project sponsor intends to add about 60,000 gsf on top of Building 3. Office space totalling 333,000 gsf would be the major use of the project. There would be 25,000 gsf of accessory retail space, 30,000 gsf of recreational/sports space, 15,000 gsf of storage space and 40,000 gsf of space for computers/data processing operations. As part of the project, parking for 298 cars would be provided on-site and in nearby lots.

The proposed trade mart would also contain 443,000 gsf, including the addition to Building 3. As described in Project Description, II.C., the trade mart would be comprised of 343,000 gsf of exhibit/display area for high technology industries. In comparison to the proposed office project discussed above, the mart would contain 60,000 square feet of accessory office space which would be devoted to sales offices. Footage for storage space would be the same for both projects. The proposed trade mart would contain neither accessory computer space nor recreational space. For the mart project, retail would also be an accessory use and would occupy 25,000 square feet. A total of 298 parking spaces would be provided as part of the trade mart project.

New construction would consist of adding two 3-story towers on top of Building 3, bringing it to a height of 105 feet, or seven stories. Second Street Square would contain about 443,000 gsf of floor area on the 118,567 gsf site for an effective FAR of approximately 3.75:1. Both proposed projects would conform with allowable floor area ratios for the project site.

Either of the proposed projects would cumulatively contribute to new and proposed development occurring in the South of Market area. The proposed office project would contribute to continued office development in San Francisco generally. Second Street, in the vicinity of the proposed project, is emerging as a secondary office development corridor. Secondary office development consists mainly of businesses which cannot afford top rent levels and are either displaced from existing downtown core locations or are priced out of the downtown office market. If Second Street Square was not developed as a trade mart it is likely that the office space would be secondary office space due to the

project's location and anticipated rents, however, there are no conditions proposed which specify the exact nature of the office use.

The buildings at the project site are best suited for firms needing relatively large spaces with a high structural carrying capacity. The proposed trade mart project would have an open floor plan which would permit approximately 100-150 companies to display, demonstrate and sell their equipment. Individual spaces could range from 2,000 square feet to 20,000 square feet or larger, allowing both large and small businesses to take advantage of the mart. The space as it exists, however, is probably not conducive to continuous (single floor) type processes as this was a main reason Stecher-Traung-Schmidt vacated the premises.[1] The trend toward smaller firms in the printing sector would suggest that the existing space is not likely to be in demand by those kinds of firms. Opportunities would exist in the office support sectors (such as filing or computing facilities), trade mart-type operations, or for "incubator" companies requiring large spaces and less labor intensive secondary uses.

Department of City Planning records indicate that as of June 1, 1983, eight projects totalling 1,010,500 gsf of office space were recently approved and four projects were under formal review by the City along Second Street between Mission and Townsend Streets, as shown in Table 5, page 47. Cumulative transportation impacts associated with the proposed project and the Second Street office development corridor are addressed in Section IV.C., Transportation, page 65.

The proposed project (office or mart) would not displace any existing industrial land uses. It would restore business and economic activity to a currently vacant group of buildings. Although neither the office nor the mart project would be consistent with potential industrial land uses, they would be consistent with principal permitted office, retail and wholesale uses in an M-1 district and commercial land uses which are existing or approved within the project area.

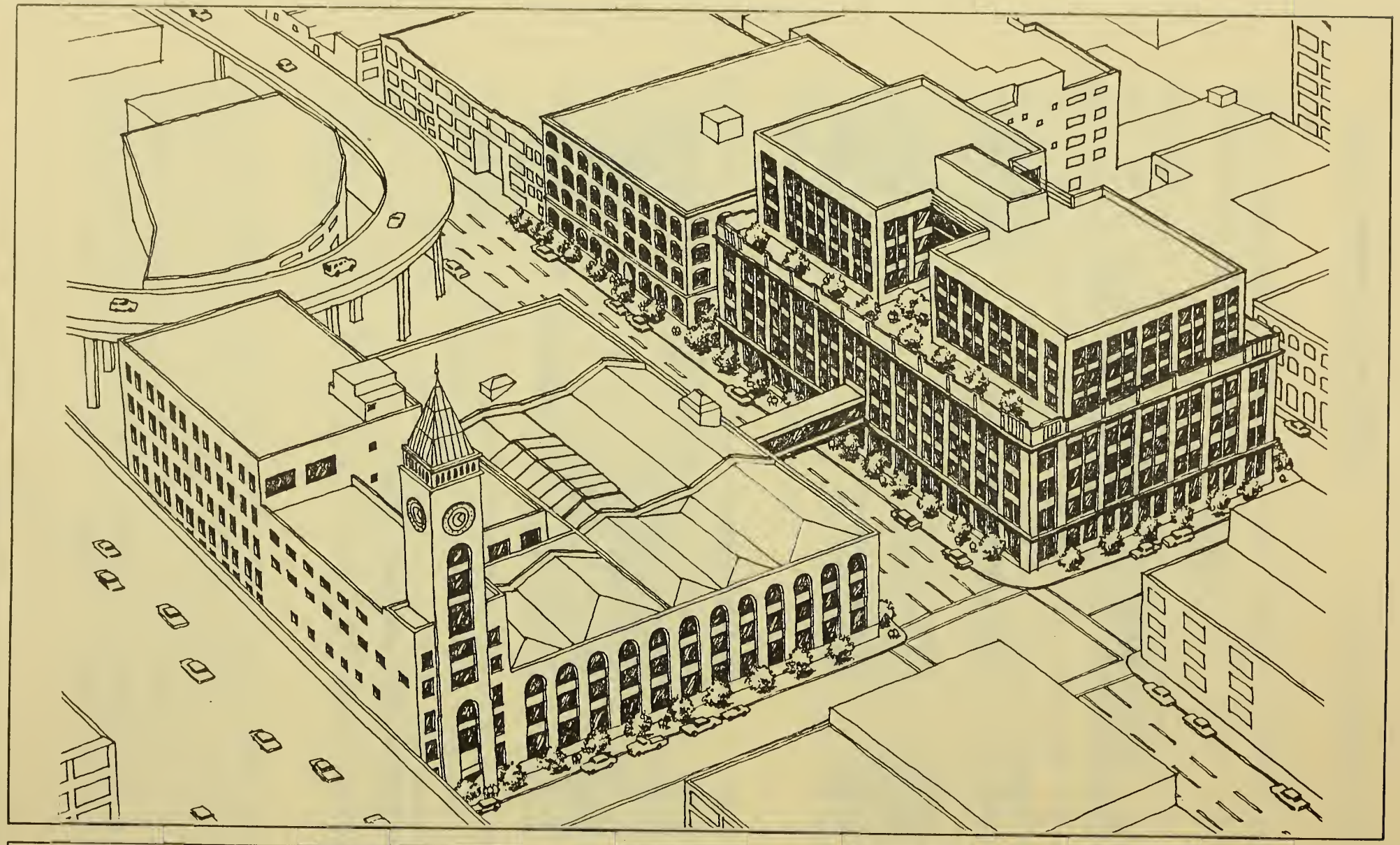
The top two stories of the addition to the proposed project would exceed the bulk limitations for the site as discussed in Section III.A., Land Use. The bulk, which must be measured diagonally, would be 235 feet and would exceed the limit by 95 feet. As illustrated in Figure 14, page 48, the addition would consist essentially of two buildings linked with small connection so the addition would not be perceived as being as bulky as the diagonal measurement would imply. For what the proposed project would actually

TABLE 5

SECOND STREET OFFICE DEVELOPMENT
(Between Mission and Townsend Streets, as of June 1, 1983)

Assessor's Block	Case No.	Projects Under Review	Gross Office Square Feet
3764/74	82.591E	Second Street Square (c)	333,000
3789	82.31EV	615 2nd at Brannan (c)	106,000
3788	82.352EV	640 2nd	39,000
3763	82.384EV	400 2nd at Harrison (c)	71,500
3750	82.241E	600 Harrison at 2nd	228,000
		Total	777,500
		Projects Approved	
3749	81.18	2nd and Folsom (Marathon Project)	566,000
3763	81.287V	490 2nd at Bryant (c)	40,000
3763	81.381	480 2nd at Stillman (c)	35,000
3794	81.569EV	123 Townsend at 2nd	104,000
3789	81.552EV	625 2nd at Townsend (c)	157,000
3788	81.296Z	690 2nd at Townsend (c)	16,600
3735	80.106	95 Hawthorne (UC Bank Extension) (c)	61,900
3722	81.417ED	144 2nd at Minna	30,000
		Total	1,010,500

(c)= Conversion (industrial and/or warehouse to office)



SOURCE: ED CHOI

Second Street Square

ARTIST'S RENDERING OF PROPOSED PROJECT

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look like from the freeway and further south from Townsend Street see Figures 4 and 5, pages 13 and 14.

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[1]Frank Vehey, Assistant Secretary, Stecher-Traung-Schmidt, telephone conversation, November 5, 1982.

B. EMPLOYMENT, HOUSING AND FISCAL FACTORS

1. Employment

a. Office Use

At full operation the office project would provide about 1,385 permanent jobs for office, retail and janitorial maintenance functions. These would include about 1,210 office workers (at one worker per 275 gross square feet of office space for 333,000 square feet), 70 retail workers (at one worker per 350 square feet for 25,000 square feet), 37 janitorial/service workers (at one worker per 12,000 square feet for the entire building), 40 computer personnel (at one worker per 1,000 square feet for 40,000 square feet, and 15 recreation workers (at one worker per 2,000 square feet for 30,000 square feet).[1]

The jobs generated by the proposed project would create additional Bay Area employment through a multiplier effect. Assuming that the new jobs created as a result of the project were primarily in the finance, insurance and real estate industries, about 1,425 additional jobs in other sectors of the Bay Area economy could result. Table 6, page 51 shows the distribution of this secondary employment by sector. The multiplier encompasses the entire Bay Area and the specific number of additional jobs in San Francisco as a result of the multiplier effect is not possible to calculate.

The total number of permanent new Bay Area jobs that would be supported by the project's addition to the stock of office space would be about 2,810 (1,385 direct jobs plus the 1,425 jobs induced by the multiplier).

Construction activities are expected to take about one year and generate about 280 person-years of construction labor.[2] As a result of the multiplier effect of project construction, about 430 additional person-years of employment would be generated in the Bay Area.[3]

b. Trade Mart Use

The trade mart would likely employ substantially fewer people since much of the space would be used for showrooms. Total employment is estimated at 440, including 330 trade mart personnel and accessory office employees (at one worker per 1,220 square feet for 403,000 square feet), 70 retail and 37 maintenance workers at densities similar to the office project.[4]

TABLE 6

SECONDARY EMPLOYMENT DISTRIBUTION
IN THE BAY AREA AS A RESULT OF
THE MULTIPLIER EFFECT

Sector	Employees	
	Office Use	Trade Mart Use
Agriculture and Primary Processing	35	11
Construction	86	18
Manufacturing	179	186
Transportation, Communications, Utilities	147	79
Trade	278	65
Finance, Insurance, Real Estate	229	57
Services and Government	470	109
TOTAL	1,425[1]	524[1]

[1] Total does not add due to rounding.

Source: EIP, based on Cooperative Extension Service, University of California, Berkeley, San Francisco Bay Area Input-Output Model 1967-1974, August 1978. The figures presented for the office use assume that the jobs in the project would be primarily in the FIRE and retail sectors. The trade mart employees would be part of the manufacturing sector.

Table 6 indicates that the overall multiplier of indirect employment is somewhat higher for the office project since many of the trade mart workers would be employed in the manufacturing sector. The total number of indirect jobs would be about 524, giving a total employment level of 964 (440 direct plus 524 indirect jobs), or over 50% less than for the office project.

Construction employment is expected to be identical for both the office project and the trade mart project at 280 person-years of labor.

2. Housing

a. Office Use

The office project would increase the demand for housing in San Francisco. According to the City Planning Commission's Office Housing Production Program (OHPP), the housing demand generated by the project would be 234 units.[5] This estimate assumes that 40% of the new office workers will move to San Francisco as a result of the project and that there are 1.8 office workers per household containing San Francisco office workers. There had been 70,000 square feet of office space within the former use on-site which has been excluded from the total in the calculation of housing demand.

An alternative analysis of the relationship between downtown office growth and housing demand in San Francisco was documented in a report prepared by Recht Hausrath and Associates, Economists, which appears as Appendix C, pages 289 through 329, of the 101 Montgomery Street EIR, certified by City Planning Commission Resolution 8941, May 7, 1981. This report is available for public review at the Office of Environmental Review, 450 McAllister Street, fifth floor, and is hereby incorporated by reference into this EIR pursuant to Section 15149 of the California Environmental Quality Act (CEQA) guidelines.

This study estimated that 15% to 30% of the people newly employed in San Francisco as a direct result of downtown office projects would move to San Francisco and that there are an average of 1.4 San Francisco workers in each San Francisco household containing downtown workers. Under these assumptions, the project would have a demand for about 113 to 225 households in San Francisco. The study further concluded that most people cannot afford housing costs in the City despite relatively high wages and employment opportunity.

b. Trade Mart

The trade mart project would result in a net loss of 10,000 square feet of office space at the site. The OHPP guidelines apply exclusively to office workers, so that no housing requirement exists for this project. The number of employees in the trade mart would be about 440, approximately equivalent to a 30,000 square foot office building. The former industrial use on the project site employed around 350 people in 1982. The proposed trade mart would represent a small increase over this amount but would be less than the peak employment which was about 650 workers. An increase in on-site employment for the trade mart would not result in a measurable increase in local or regional housing demand.

c. Housing Affordability

The ratios of housing expenses to income, according to the "Office Housing Production Program (OHPP) Interim Guidelines," January 1982, are 30% of household income for rental expenses and 38% of household income for home ownership expenses. The down payment for home ownership may be assumed to be between 10% and 20% of purchase cost; however, a household's ability to afford a down payment would depend on household assets and liabilities, and would vary widely for different households. Assumptions regarding mortgage interest rates must also be made. Considering the volatility of interest rates in recent years, an affordability analysis based on current market interest rates might not be relevant when the project is completed and occupied.

The housing stock in the City is expanding, but not at a rate adequate to accommodate the needs of all the employees who work in San Francisco. Many factors, including job growth, have caused housing prices to rise both in the City and the Bay Area. Low and moderate income households have been especially impacted as the tight market has led middle-income households to compete with low and moderate income households for the same housing stock.[7] There are no specific data available on the nature of population turnover in the City due to changes in housing costs. Household income in San Francisco grew less than the rate of inflation over the past decade and is lower than in other counties such as Contra Costa and Santa Clara.[8] If workers from these areas move into the City, residents on fixed incomes with relatively large households could be at a disadvantage in terms of their ability to afford housing.

Based on available data, an approximation of a housing affordability analysis appears in Appendix E, Table E-1, page A-62. Data in the table rely on published sources of office worker incomes (not household income), and prices of housing (without regard to housing

availability). Assumptions are made regarding ratio of housing expenses to income, mortgage interest rates and down payments. Analysis based on these data and assumptions indicates that most project employees would not be able to afford ownership housing in San Francisco, although a significant minority, depending on the number of workers per household, would be able to do so. Most project employees, except the lowest-paid clerical employees desiring to live alone, would be able to afford rental housing in San Francisco.

Recht Hausrath Associates concluded in a recent study that accurately identifying housing affordability characteristics for persons who would enter the San Francisco housing market as a result of a new office project is a complex problem virtually impossible to describe.[6] One major problem is that the identity and financial resources of the persons employed in the new space cannot be known prior to occupation of the project. Second, even if such information were to be obtained, it would not provide a satisfactory basis for estimating the housing impact of the project. The reasons for this are several:

- Persons actually working in newly constructed space, as noted above, would not necessarily be those that are newly employed in San Francisco as a result of the project (Recht Hausrath, pages 6, 8 and 15).

- Although some of the employment opportunities in the project would be newly available, those filling the positions may not be newly employed in San Francisco; most persons obtaining newly available employment in the City have been employed there previously.

- Persons newly employed in San Francisco in newly created jobs may not have obtained their job as a result of new office development; their employer may have created the new opportunity irrespective of the project (Recht Hausrath, pages 11 and 23).

Thus it is apparent that identifying housing affordability for a specific household would require a survey that probed well beyond the conventional survey information, such as income, housing preference, and current housing costs, and asked for information such as household assets and obligations, housing assistance through family networks, tax position, and health. This kind of information is necessary to obtain an accurate picture of housing

needs and desires and the ability to fulfill them (Recht Hausrath, pages 4-5, 17-19, 28-30), yet obtaining such information is unlikely since respondents may not be willing to provide such detailed information. The information obtained from such a survey would be a very limited indicator of the actual effects of new office construction on housing because any identifiable survey population is no more than an undetermined fraction of the proper, but unidentifiable, survey population.

Survey respondents would probably be willing to identify what they currently pay for housing, to respond to questions about housing preferences, and to provide information on housing type, location, and tenure, on household demographic characteristics, and on household income. This information would provide a description of actual housing behavior and an indication of housing preferences. It would not necessarily provide an accurate description of current housing affordability or what workers could afford as housing market conditions change.

3. Cumulative Effects

a. Office Use

The 263,000 square feet of net new office uses proposed for the project would constitute about a 1.4% increase over the 18.4 million square feet of net new office space currently under construction (6,076,000 square feet), approved (5,224,800 square feet), under formal review (4,141,540 square feet) or built but not occupied (2,996,050) in the downtown or South of Market area). A list of the projects included in these totals is presented in Appendix D, Table D-1, page A-54. More than 1.5 million square feet of office space was absorbed annually in the downtown between 1977 and 1982.

If all 18.4 million square feet of office space were to be completed and occupied by 1990, there could be a short-term cumulative impact of oversupply while the market adjusts itself to absorb the new space. During this period, commercial rents would be expected to decline, especially in the core of the downtown area, and vacancy rates would rise. The number of proposed new office developments could decline if there is not sufficient demand for office space presently planned or under construction, combined with office space that will become available due to existing leases that will expire.

Office workers employed by the project would contribute to the cumulative impact of office development upon City and regional housing demand. Table E-1, Appendix E,

page A-62, indicates that project demand would range from 0.3% to 0.4% of projected housing growth from 1982 to 1990. The household cumulative housing demand shown in Table E-1 is based on the list of downtown office projects presented in Table D-1, Appendix D, page A-54.

This impact on the housing market would be mitigated to a certain extent because various office developers have agreed to provide units or have proposed units on-site, through City Planning Commission project approval requirements.[5] Cumulative office development would increase the City's current high ratio of jobs to housing supply. Housing demand would increase in an already tight housing market. In market situations where demand outstrips supply, housing prices can be expected to increase.

Factors independent of office development and outside the control of the City, such as immigration, interest rates, state and federal tax policies, economic trends, changing household characteristics and City policies such as rent control, also influence the housing market. Quantification of the effects of cumulative office development on San Francisco housing prices is not possible.

The new housing demand could be accommodated through additions to the housing stock, increases in the number of office workers per household, and/or displacement of existing residents. Large additions to the San Francisco housing stock are not anticipated in the near future because the housing construction industry has declined due to high costs and interest rates. Census data indicate that the number of people per household has historically been declining. This demographic trend will probably not reverse itself in the next few years due to a variety of factors, including divorces and separations, departure of young adults from families, and the increasing proportion of elderly population.

b. Trade Mart Use

As noted above, the trade mart use would result in a net loss of office space and would not have a cumulative impact on the office market or the City's housing market.

4. Fiscal

a. Revenues

The proposed project would generate revenues from property tax, business tax, utility users tax, and sales tax. These revenues are summarized in Table 7, page 57. The

TABLE 7

ESTIMATED REVENUES GENERATED BY THE SECOND STREET SQUARE PROJECT FOR THE CITY AND COUNTY OF SAN FRANCISCO

Tax		Estimated Amount of Revenue: Office Use	Estimated Amount of Revenue: Trade Mart Use
Property tax		$183,100	$183,000
Business tax (Gross receipts tax and payroll tax)		$ 656,800-661,900	$213,900-219,000
Utility Users tax			
Electricity	$36,000	$60,300	
Gas	1,810	5,980	
Water & Sewer (Surtax)	560	179	
Telephone	31,000	6,600	
Total		69,370	73,100
Sales tax		103,200	88,500
Total Revenues		$1,013,000-1,018,000	$559,000-564,000

Source: EIP

Note: See text for description of revenues.
Totals do not add due to rounding

property tax and gross receipts tax would be identical for the office and trade mart project. Other revenues have been calculated separately for each project.

Assessed Valuation and Property Tax. Based on construction costs, the project could increase the fair market value of the site by about $18,350,000.[9] Total additional annual property taxes would be $214,700 based on the 1% of full market value maximum tax levy allowed under Proposition 13, plus an additional levy of 0.17% of full market value for repayment of bonds previously approved by the electorate. (The current total rate for the 1982-83 fiscal year is 1.17% of full market value.) It is not known at present how the property taxes would be distributed at the time the project is completed; however, applying the 1982-83 rate, San Francisco would receive about $183,100 (85.2% of the total composite property tax revenues). Table 8, page 59 presents the distribution of new property tax revenues to the appropriate agencies.

Subtracting current property tax revenues of $110,000, net revenues generated by the project would be $104,700.

Gross Receipts Tax. This part of the business tax would be paid on lease revenues from the project. Assuming the space leases for $20 to $24 per square foot on average, this tax would equal $25,680 to 30,800 (the tax rate is $3.00 per $1,000 gross receipts).

Payroll Tax. The firms located in the project would pay this business tax. The tax rate is 1.5% of total payroll. Assuming that downtown office workers earn an average salary of $32,200, computer personnel earn a slightly higher amount at $34,300 and that other workers in the project would earn an average $15,000 annually, this tax would total approximately $631,100 for the office project and $188,200 for the trade mart.[10]

The former business on the site paid an estimated $120,750 annually in payroll taxes.

Utility User's Tax. Utility user's tax revenues are paid on the cost of electricity, gas, water and telephone use.

Electricity
Office: 9,600,000 kwh/year x $0.075/kwh x $.05 tax = $36,000

TABLE 8

DISTRIBUTION OF PROPERTY TAX GENERATED
BY THE SECOND STREET SQUARE PROJECT
(net of current revenues)

Agency	Property Tax Revenues
City and County of San Francisco	$ 183,100
San Francisco Unified School District	15,700
San Francisco College District	2,800
Bay Area Pollution District	215
BART	12,900
TOTAL	$ 214,700[1]

[1] Total does not add due to rounding.

Trade Mart: 16,080,000 kwh/year x $0.075/kwh x $.05 tax = $60,300

Gas

Office: 63,900 therms x $.5665/therm x $.05 tax = $1,810

Trade Mart: 211,000 therms x $.5665/therm x $.05 tax = $5,980

Water

Office: (714,235 cubic feet water/year x $0.00414/cubic foot) plus
(714,235 cubic feet sewage/year x $.0115/cubic foot) x $.05 tax = $560

Trade Mart: (229,400 cubic feet water/year x $0.00414/cubic foot) plus
(229,400 cubic feet sewage/year x $0.0115/cubic foot) x .05 tax = $179

Telephone

Office: 443,000 square feet x $1.40 square foot x $.05 tax = $31,000

Trade Mart: $300 x 440 employees x $.05 tax = $6,600.[11]

The total utility user's tax for the office project would be $69,370. The total utility user's tax for the trade mart would be $73,100. The previous use generated an estimated $19,790 in utility users taxes.

Sales Tax.

Office: $1,604,000 annual taxable purchases by office and computer employees x 1.25% tax = $20,050.[12]

The retail businesses in the office project would generate an additional $83,125, for a total of $103,200 in sales tax to the City.[12]

Sales tax revenues generated by the one-half percent BART sales tax would be about $41,300. Of this total, BART would get $31,100 directly and the remaining $10,200 would be distributed by the Metropolitan Transportation Commission (MTC) among BART, Muni and AC Transit.

Trade Mart: The computer and office employees in the trade mart project would make an estimated $426,000 in tax purchase yielding a tax of about

$5,325. The retail space is equivalent to that in the office project so an additional $83,175 in revenue could be expected from that source, for a total of $88,500.

Sales tax revenues generated by the one-half percent BART sales tax would be about $35,400. Of the total, BART would get $26,650 and the remaining $8,750 would be distributed by the MTC among BART, Muni and AC Transit.

Employees of the business previously at the site generated an estimated $7,850 in sales taxes.

Total Revenues. The potential total revenues to San Francisco would range from a high of $1,018,000 for the office project and a low of $559,000 for the trade mart. Subtracting existing revenues from the site, the potential increased revenues would be $281,000 to $740,000; however, these figures are subject to a number of variables that could affect the estimates:

- Property tax distribution could change in future years
- Payroll tax could vary according to the salaries of the employees in the proposed project
- Rents of the office may change, thereby affecting the gross business tax
- Cost for utilities, particularly telephone, are also variable

b. Costs

Costs in San Francisco for providing municipal services to the proposed project are difficult to quantify. Most evidence indicates that overall costs per unit of service provided (per square foot or per employee) to the new building would be lower than for the existing buildings (see Appendix E, Table E-3, page A-65). This reduction in per square feet costs is primarily due to improvements in fire and security protection systems in new construction. Costs for water and sewer service would be paid through user charges.

Cost increases due to increased patronage would be expected for Muni, SamTrans, BART, and Golden Gate Transit. The City's general fund provides for a subsidy to the Municipal Railway's operating budget. The subsidy covers the difference between Muni's costs and

the revenues that Muni receives from fares and from federal and state governments and represents the cost of Muni to the City. The net marginal cost (an increase in the deficit for Muni operations) per peak hour ride was $0.39 in 1982.[13] The proposed office project would generate about 550 a.m. and p.m. peak period trips which could generate a cost to Muni of $55,770.[13] The proposed trade mart project would generate about 160 a.m. and p.m. peak period trips, reducing the potential cost to Muni to $16,200. The extent to which this cost would be by the general fund allocation to Muni is not known. State and federal funds to Muni are decreasing and the City is reviewing other options for increased revenues.[14]

It is estimated that 80 a.m. and p.m. peak period trips a day on BART would be generated by the proposed office project employees and 60 a.m. and p.m. peak period trips by the trade mart employees. The deficit per rider for BART is estimated at $0.97.[15] Using this rate, the proposed project would generate a deficit of about $15,180 to $20,200 for the trade mart and office project respectively. However, additional property tax and sales tax revenues generated by the project for BART would yield a surplus of $23,800 to $28,900 over the operating deficit.

If the same proportion of General Fund revenues historically allocated to Muni continued, it could be assumed that the proposed project revenues would exceed municipal costs directly attributed to the project at the time of occupancy. Due to limitations imposed by Proposition 13 on property tax increases, revenues might not increase as rapidly as inflationary increases in City costs. If all current sources of revenue associated with the proposed project were held constant (i.e. fees and rates do not change and no new assessment levied) costs would eventually exceed revenues.[16]

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[1] Office employment derived from: San Francisco Department of City Planning, Guidelines for Environmental Review, page 14. Retail and maintenance employment derived from analysis in: 101 Montgomery Street, FEIR, certified May 7, 1981, page 77. Recreation related employment estimated based on data in the following studies: Caltrans District 4, 12th Progress Report on Trip Ends Generation Research Counts, December 1979, page 118; and, San Diego Association of Governments, San Diego Traffic Generators, May 1979 (revised March 1981), page 1-SR. Computer personnel estimated by EIP.

[2] An estimated $18,350,000 (1983 dollars) would be spent during construction. Employment estimate assumes labor costs would be about 55% of the total ($18,350,000 x 55% = $10,092,500), including direct wages, payroll taxes and fringe benefits, and annual cost of $36,400 per construction worker.

[3]All multipliers based on the Bay Area Input-Output Model from Cooperative Extension Service, University of California, Berkeley, San Francisco Bay Area Input-Output Model 1967-1974. This is the equivalent of a multiplier of 1.55 in that for each person-year of employment supported by project construction, an additional 1.55 person-years of secondary employment would be supported.

[4]Trade mart and office employment is based upon EIP research on employment patterns in the Merchandise Mart (wholesale furniture sales) indicated approximately one employee per 1,220 gross square feet. Personal communication, Donald Preiser, Vice President of Western Merchandise Mart, March 23, 1983.

[5]Office Use: $\frac{263{,}000 \text{ gross square feet}}{250} \times 40\% \div 1.8 = 234$

San Francisco Department of City Planning, Revised Guidelines for Administering the Housing Requirements Placed on Office Development under OHPP, December 7, 1981, page 5.

[6]Recht-Hausrath Associates, "The Feasibility of Performing a Housing Affordability Analysis Relevant to Office Growth in Downtown San Francisco," July 1982.

[7]City and County of San Francisco, Report of the Citizen's Housing Task Force, July 29, 1981, pages 114 and 115.

[8]San Francisco Department of City Planning, "Summary of Recent Census Information," October 28, 1982.

[9]Ron Kaufman, Project Sponsor, personal communication, February 23, 1983.

[10]Office employee income estimated from: San Francisco Planning and Urban Renewal Association, Impact of Intensive High-Rise Office Development - Detailed Findings, Table 21, page 117 (1975). The 1974 data have been inflated by 94% to reflect 1983 dollars. This represents the mid-point of the range of increases for office-related occupations as given in U.S. Department of Labor, Area Wage Survey: San Francisco-Oakland SMSA, Washington, D.C., March 1982, page 11. Computer trade mart personnel salaries derived from Area Wage Survey, op. cit., page 17, inflated to 1983 dollars. Other wage levels obtained from California Employment Development Department, California, Employment and Payrolls, October -December 1977, inflated to 1983 dollars.

[11]Since average telephone services sales ($1.40/sq. ft.) are based upon office use, the factor has been converted to sales per employee for use for trade mart project.

[12]Based on information presented in 101 Montgomery FEIR EE 80.26, certified May 7, 1981, page 83.

Sales tax revenue per 1 square foot of commercial space is estimated to be $2.66 based on an estimated 3,097,000 square feet of commercial area in the C-3-0 District and 1980-

1981 allocation of $8,250,000 in Sales Tax Revenue (Gruen Gruen + Associates, page 111, City and County of San Francisco Appropriations Ordinance (1980-1981) and Arthur Andersen & Company, Table 11-4).

[13]Bruce Bernhard, "The Marginal Cost of Peak Muni Passenger Trips per Unit of Office Space," San Francisco Public Utilities Commission, February 1981. 550 x $.39 x 260 working days a year = $55,770 (office); and 160 x $.39 x 260 = $16,200 (trade mart).

[14]Bruce Bernhard, San Francisco Public Utilities Commission, conversation, January 18, 1982.

[15]Martin Birkenthal, Planner, BART, telephone conversation, telephone conversation June 18, 1983.

[16]In addition, the project sponsor would be required to pay a one-time Transit Impact Fee. This fee requires developers of office projects in San Francisco to contribute to a fund to finance the increased cost of Muni services necessitated by their projects on the rate of $5 per gross square foot of new construction. The legality of this Ordinance is being challenged and currently pending in San Francisco Superior Court. If the fee is actually administered at the $5 rate, Second Street Square could yield $300,000.

C. TRANSPORTATION

1. South of Market Area (SOMA) Travel Surveys

During fall 1982, extensive travel surveys were conducted with employees in the South of Market Area (SOMA) bounded by Folsom, Berry and Ninth Streets, and The Embarcadero.[1] Travel characteristics and mode of travel were established for the area. Employee travel modes within SOMA are shown in Table 9 below.

TABLE 9

EMPLOYEE TRAVEL MODES IN THE SOUTH OF MARKET AREA (SOMA)[1]

	Travel Percentage By Mode		
Employee Travel Mode	Office	Retail-Business Service	Sales
Auto (Includes passengers)	56%	72%	74%
Vanpool	2%	--	--
Muni	15%	18%	16%
BART[2]	10%	5%	7%
AC Transit[2]	5%	1%	1%
Southern Pacific[2]	2%	--	1%
SamTrans[2]	2%	--	--
Golden Gate Transit	3%	1%	--
Charter Bus	2%	--	--
Other (walk, bicycle, other transit)	3%	3%	1%
	100%	100%	100%

[1]Source: San Francisco Department of City Planning, Guidelines for Environmental Review, July 1983.

[2]Note: A portion of these systems' riders might also use Muni as feeder service.

The SOMA surveys generally reveal a much higher auto usage than is experienced in the downtown. Current data indicate that about 25% of all downtown employees commute by auto, about 60% less than the rate surveyed for SOMA. This higher ratio of auto usage is probably a result of two factors. First, transit service to SOMA is not as comprehensive as the service enjoyed by the downtown area. In addition, SOMA contains available parking which is reasonably priced (SOMA employees pay an average of $2 daily for parking). These factors tend to discourage transit usage and encourage auto

commuting. Of the transit usage by SOMA employees, Muni and BART are the primary modes, carrying approximately two-thirds of all SOMA transit trips. A unique feature of SOMA travel is the use of charter buses by two percent of the employees. Although mode choice for SOMA employees differs substantially from the downtown, the employees' residence locations are comparable - 45% in San Francisco, 16% on the Peninsula, 27% in the East Bay and 13% in the North Bay.

The SOMA surveys determined that the occupancy in commute vehicles averages 1.25 persons.

2. Trip Generation Distribution

a. Office Project

The office project would include about 333,000 gross square feet of office space, 40,000 square feet of computer space, 25,000 square feet of accessory retail space and 30,000 square feet of recreational space. This development replaces an on-site employment (as of May 1982) of 350 printing company employees. It is noted that prior to 1982 the previous on-site employment was 650 persons. Based upon trip generation guidelines provided by the City[2] and research conducted by Caltrans[3] and the Institute of Transportation Engineers,[4] the project would generate about 10,250 new daily person trip ends (pte) of which 935 would occur during the p.m. peak-hour and 1,660 during the p.m. peak 2-hour period (see Table 10, page 67).

The distribution of these trips among travel modes (auto, Muni, BART, etc.) would depend upon a number of factors including the residence locations of employees, type of employees, availability and cost of parking and transit convenience. Based upon City guidelines,[2] actual surveys of South of Market area employees and national research on downtown secondary travel,[5] the project would have peak-hour trip distribution as outlined in Table 11, page 68.

b. Trade Mart Project

The high technology trade mart's trip generation has been based upon travel characteristics of an existing mart, City guidelines and the project sponsor's projections of employment and average daily visitors.[2,6,7] The sponsor's estimates for project travel characteristics are essentially equal to the City's guidelines for business service and sales

TABLE 10

PERSON TRIP GENERATION OF OFFICE PROJECT

Land Use	Daily Trip Rate	Daily Trips	Peak Period Trips (1 Hr./2 Hrs.)
- 333,000 gsf office area[1]	18.1/1,000	6,025	635/1,000
- 40,000 gsf computer area[2]	5/1,000	200	25/40
- 25,000 gsf retail area[1]	150/1,000	3,750	375/750
- 30,000 gsf recreational area[3]	50/1,000	1,500	120/180
less 350 previous printing company employees	3.5/emp.	(1,225)	(220)/(310)
Net Totals		10,250	935/1,660

6,025 daily office area trips	x 40% =	2,410	worktrips	x 60%	= 3,615	non-work trips
200 daily computer area trips	x 40% =	80		x 60%	= 120	
3,750 daily retail area trips	x 4% =	150		x 96%	= 3,600	
1,500 daily recreational area trips	x 4% =	60		x 96%	= 1,440	
(1,225) daily printing company trips	x 57% =	(700)		x 43%	= (525)	
		2,000	worktrips		8,250	non-work trips

[1] San Francisco Department of City Planning, Guidelines for Environmental Review, July 1983.

[2] Assumes one employee/1,000 sq.ft.

[3] Caltrans, Twelfth Progress Report on Trip Ends Generation, December 1979.

TABLE 11

PROJECT PERSON TRIP DISTRIBUTION[1]

Location and Mode	Peak Period (1 hour/2 hour) Trips	
	Office Project	Mart Project
San Francisco		
Auto	125/210	5/10
Muni	125/215	40/80
BART	5/10	5/10
Other[2]	360/700	260/520
	615/1,135	310/620
Peninsula		
Auto	65/115	5/10
BART	5/10	--
SP	10/15	5/10
SamTrans	5/10	5/10
Other	5/10	--
	90/160	15/30
East Bay		
Auto	85/135	10/20
BART	40/70	10/20
AC	20/30	5/10
Other	10/15	5/10
	155/250	30/60
North Bay		
Auto	50/80	5/10
GGT Bus	15/25	5/10
Other	5/10	--
	70/115	10/20
	930/1,660	365/730

[1] Source: Department of City Planning, Guidelines for Environmental Review, July 1983.

[2] Includes pedestrian trips to/from retail area.

employment in SOMA. As shown on Table 12, page 70, the mart project would generate about 4,205 new daily trips (trip distribution by mode is outlined in Table 11, page 68).

In addition to the typical daily mart activity, periodic special events would occur. Approximately ten times per year, three- to four-day seminars would attract about 300 people per day. On these days, however, other visitors would number 100-200 and the net increase over a typical day would be 50-150 visitors. About two to three times each year, major technology trade shows are held at the Moscone Convention Center and Brooks Hall. During these shows, it is anticipated that 2,000-3,000 persons might visit the mart daily over a three-day period. Generally, two of the three trade show days are over a weekend. Travel between the mart and the trade shows would be accommodated by special shuttle bus service (provided by the mart) or would be pedestrian (to and from shows at the Moscone Center).

c. Potential Effects of Transportation System Management (TSM) Measures

If TSM measures were incorporated into a comprehensive program, the project's travel patterns would change. If for example, project travel characteristics approached those of the downtown area, transit ridership would increase from about 40% to over 70%. In addition, auto occupancy would increase from 1.25 to 1.4 persons per car. A TSM program would reduce parking demand and traffic impacts while adding to the demand for transit services.

d. Cumulative Development

Trip generation and modal split have also been projected for office and retail development under construction, approved or under formal review in the downtown area (including South of Market) as of June 1, 1983.[8] The cumulative downtown office projects total about 18.4 million gross square feet of office and 620,000 gross square feet of retail. (It should be noted that the total square footage of downtown projects under formal review by the Department of City Planning fluctuates because projects often undergo design change and/or may be withdrawn or disapproved.) When completed and occupied, these downtown projects would have an estimated cumulative generation of about 45,000 p.m. peak-hour person trips (see Table 13, page 71). The Second Street Square office project would amount to about 2% of the cumulative peak-hour generation if included with these downtown projects. The trade mart project would amount to about 0.8% of the cumulative total.

TABLE 12

PERSON TRIP GENERATION OF TRADE MART PROJECT

Land Use (net square feet)	Daily Trip Rate	Daily Trips	Peak Period Trips (1 hr/2 hrs)
- 403,000 gross sq. ft. trade mart area[1,2,3] (including accessory office area)	5/1,000	2,015	210/290
- 25,000 gross sq. ft. retail area[1]	150/1,000	3,750	375/750
Less 350 previous printing company employees[4]	3.5/employees	(1,225)	(220)/(310)
	NET TOTALS	4,540	365/730

- 2,015	daily mart area trips	x	40%	=	805	work trips	x	60%	=	1,210	non-work trips
- 3,750	daily retail area trips	x	4%	=	150	work trips	x	96%	=	3,600	non-work trips
- (1,225)	daily printing co. trips	x	57%	=	(700)	work trips	x	43%	=	(525)	non-work trips
		TOTALS			255	work trips				4,285	non-work trips

[1] San Francisco Department of City Planning, Guidelines for Environmental Review, July 1983.

[2] Donald Preiser, Vice President, Western Merchandise Mart, meetting on March 23, 1983.

[3] Roger Mack, President, Alternate Decisions Company, meeting on March 30, 1983.

[4] ITE, Trip Generation, 1979.

TABLE 13

PEAK PERIOD PERSON TRIP GENERATION OF DOWNTOWN DEVELOPMENT[1]

Transportation Mode	Peak Period (1 hour/2 hour) Cumulative Trip Generation			
	Total Trips	Retail Trips	South of Market Office Trips	Downtown Office Trips
- Auto	10,050/15,350	840/1,680	3,610/5,360	5,600/8,310
- Muni	11,520/17,670	1,120/2,240	970/1,440	9,430/13,990
- BART	8,200/12,270	190/380	640/950	7,370/10,940
- AC Transit	2,770/4,150	90/180	320/470	2,360/3,500
- Golden Gate Buses	1,460/2,210	90/180	190/280	1,180/1,750
- S.P.	720/1,070	---	130/190	590/880
- SamTrans	420/620	---	130/190	290/430
- Ferry	290/430	---	---	290/430
- Charter Bus	130/190	---	130/190	---
- Other	9,690/17,990	7,000/14,000	330/490	2,360/3,500
TOTALS	45,250/71,950	9,330/18,660	6,450/9,560	29,470/43,730

[1] San Francisco Department of City Planning, Guidelines for Environmental Review, July 1983.

In projecting cumulative impacts, an alternate approach forecasts travel demand based upon regional projections of employment share (rather than land use as used in this EIR).[4] With a sufficiently detailed data base, the share of future employment for downtown San Francisco (as a part of the greater Bay Area region) can be projected, based directly upon long-range trends. Appendix C, page A-43, discusses the differences between the two approaches.

3. Impacts on the Street System

With an auto occupancy of 1.25 persons per vehicle, the proposed office project would generate about 260 net new peak-hour auto trips and the Mart project about 20 net new trips. With an auto occupancy of 1.4 for the downtown area and 1.25 for the South of Market area, the cumulative development would generate about 7,600 p.m. peak-hour auto trips.

To assess existing traffic conditions on the surface streets, peak-hour counts were conducted at the intersections of Second/Brannan, Second/Bryant, Second/Harrison, Harrison/bridge off-ramp and First/Harrison.[9] Capacity calculations (calculation sheets are on file and available for review at the Department of City Planning, 450 McAllister Street, 5th Floor) indicate that with the exception of First/Harrison, the intersections operate at stable (service level C) conditions (Table 14, page 73). (Service level definitions are shown in Appendix B, page A-34.) Site access is affected by congestion on the regional links. During the p.m. peak-hour both the I-80 freeway (eastbound) and Highway 101 (southbound) operate at jammed conditions associated with service levels E-F.[10] The congestion on the Bay Bridge causes back-ups through the First/Harrison intersection, resulting in E-F service levels at that location.

A cordon count of peak-hour travel in/out of the downtown indicates a total volume of about 79,500 vehicles entering and leaving the downtown area during the p.m. peak-hour.[11] Because a portion of this volume represents a "double counting" of through trips the actual volume is estimated at about 70,000. The 7,600 vehicle trips generated by cumulative downtown development would increase the existing volume by about 10%. If it is assumed that traffic to and from downtown at key intersections would increase (in the project area) proportionally, the effects on the intersections would be as outlined in Table 14, page 73. As indicated in Table 14, the addition of project traffic would not degrade intersection service levels further.

TABLE 14

EXISTING AND PROJECTED INTERSECTION SERVICE LEVELS[1]

Intersection and Peak Hour		Service Level				
		Existing	With Office Project[2]	With Office Project and Cumulative[2]	With Mart Project	With Mart Project and Cumulative
Second/Brannan	4:30-5:30 p.m.	B	B-C	C	B	C
Second/Bryant	7:30-8:30 a.m.	A	A	B	A	B
Second/Harrison	4:30-5:30 p.m.	B-C	C	D	B-C	D
Harrison/Bridge off-ramp	7:30-8:30 a.m.	A	A	B	A	B
First/Harrison	4:30-5:30 p.m.	E-F	E-F	E-F	E-F	E-F

[1] A complete discussion of service level definitions is found in Appendix B, page A-34.

It is noted that (allowing for typical count errors), the 1983 cordon count appears to be comparable to the count conducted in 1965.[11] As development has occurred, increased travel demand has apparently resulted in a spreading of the peak period and a shift from auto to transit modes.

Current peak hour volumes on regional highways are presented in Table 15, page 75. The office project's 260 vehicle trips would have no measurable effect on these highways. However, cumulative downtown development would generate traffic which would theoretically increase the peak hour volumes by 4% - 13%. Because the Bay Bridge and Highway 101 (to the Peninsula) currently operate at capacity, peak-hour volumes could not increase. The effect of this added volume would be to extend the jammed (service level E-F) conditions (currently occurring during the peak 2 hours) throughout much of the 3-7 p.m. period.

These traffic impacts assume that new downtown employees (generated by cumulative development) would continue to follow existing modal split patterns. Because the regional highway network is operating virtually at capacity during the p.m. peak hour, new employees may choose to shift to alternate modes. As outlined in subsequent sections, BART, AC Transit and Southern Pacific service would increase capacity within the next five years. Although these systems would still be congested, they could attract an increasing share of the peak hour travel. A secondary mode shift would be the increased formation of carpools and/or vanpools. With potential trends for increased transit usage and vehicle occupancy, the actual cumulative effects on the street network would be correspondingly reduced.

The project would have a localized effect on the streets bordering the site. The project's parking would be accessible from Second Street and project traffic could conflict with through traffic on Second Street. The traffic generated by the project would not, however, be expected to alter existing and projected service levels at nearby intersections.

4. Transit Service

a. Muni

Existing ridership statistics on the lines serving the project site have been provided by the City. Outlined in Table B-3, page A-36 of the appendix these data reflect the p.m.

TABLE 15

1981 PEAK HOUR VOLUMES ON REGIONAL HIGHWAYS

Facility	Peak Hour Volume
Highway 101 (south of I-80)	15,100
Highway 101 (north of Golden Gate Bridge)	11,000
Highway 80 (north of Highway 101)	17,100
Highway 280 (Mariposa to Brannan)	4,600

Source: Caltrans, 1981 Traffic Volumes, 1982.

peak hour ridership on Muni lines outbound from the South of Market and downtown areas. The projections include increased ridership due to cumulative development which is under construction, has been approved or is under formal review as of June 1, 1983. A volume/capacity ratio of 100% indicates ridership that is full capacity and is considered to be the maximum acceptable load factor (150% of the available seating for buses and 200% of the available seating for light rail vehicles).

Of the 11 lines serving the project area, the 30-line and 30 AX/BX lines are projected to have volume/capacity ratios approaching or exceeding 100%, and these lines will experience congestion during the p.m. peak hour and peak two hour periods. The volume/capacity ratios would not be measurably affected by the office project (the mart project generates fewer trips). Because the 80X and 81X would not provide convenient service between the site and the SP station, it is not expected that either project would increase patronage on these lines.

Systemwide, Muni's downtown service currently operates at a volume/capacity ratio of about 80% (or approximmately a load factor of 1.28 based on seated capacity) during the p.m. peak hour. With cumulative downtown development, the downtown lines' ridership would exceed their current capacity. Muni plans project a 19% increase in the system capacity over the next five years.[12] This increase would reflect added capacity in the Muni Metro light-rail service, and the replacement of existing buses with articulated coaches. Muni expects to complete engineering for the proposed E-line by 1986 and construction by 1989. This line would run in an exclusive rail right-of-way along the Embarcadero roadway from Fort Mason to the SP Depot. With these capacity increases, Muni's downtown service would generally accommodate the projected patronage; specific benefits, however, would depend upon a more detailed improvement program with capacity increases cited for each route.

Consideration has also been given to the use of Muni lines as feeders to the regional transit service. The 15, 30, 32 and 42 lines link with the downtown area and could therefore provide feeder service to the BART and AC Transit systems. These lines are currently operating at a combined load factor of 0.45 (in the peak northbound direction approaching Market Street).[12] As shown in Table 16, page 77, the load factor with cumulative South of Market development plus either of the projects would allow the feeder service to remain within its capacity.

TABLE 16

RIDERSHIP ON MUNI FEEDER LINES APPROACHING MARKET STREET

	Patronage				Load Factor			
Line	Exist.	Future Without Project	Future With Office Project	Future With Mart Project	Existing	Future Without Project	Future With Office Project	Future With Mart Project
15, 30 32, 42	1,325	2,035	2,165	2,095	0.45	0.69	0.74	0.71

The project would be subject to the development fee imposed under Ordinance No. 224-81 (if that fee is sustained) and whatever other lawful measures which may be adopted by the Board of Supervisors for the purpose of generating funds to provide for mitigation of the incremental peak-hour transit congestion attributable to the project upon completion.

b. BART

BART staff have provided p.m. peak-hour operating statistics for outbound trains at their peak load points (during October-December 1982).[13]

Cumulative South of Market and downtown development would increase BART ridership by about 8,000 passengers. BART's short-term (5-year) improvement program calls for an approximately 20% increase in capacity (with added cars and some decrease in headways).[14] The proposed Daly City tail track would improve system capacity by an additional 50%. With these improvements the East Bay peak hour load factors would average 1.0-1.1 and Daly City load factors would average 0.6-0.7. BART district policy calls for a maximum load factor averaging 1.3 for all trains during the peak hour. The office project would have no measurable effect on load factors (Table 17, page 78). The Mart project would generate fewer BART trips and would similarly not be measurable.

c. Golden Gate Transit

Golden Gate Transit District operates 140 buses out of the downtown area during the afternoon peak hour.[15] During the peak two-hour period about 250 buses operate.

TABLE 17

BART P.M. PEAK PERIOD OPERATING STATISTICS

	East Bay			Daly City		
	Existing	Projected Without Project	Projected With Office Project	Existing	Projected Without Project	Projected With Office Project
Seats (1 hr./2 hr.)	9,924/20,136	18,000/36,000	18,000/36,000	6,912/17,964	12,000/24,000	12,000/24,000
Passenger (1 hr./2 hr.)	13,556/24,928	19,000/35,000	19,050/35,085	5,821/10,859	8,000/15,000	8,020/15,030
Average Load Factor (1 hr./2 hr.)	1.37/1.24	1.06/0.97	1.06/0.97	0.84/0.60	0.67/0.63	0.67/0.63

As outlined in Table 18, page 79, the existing and projected ridership would be within the system's capacity. The projected conditions reflect a District 5-Year Plan which calls for an increase in capacity of up to 25%. The capacity increase would be subject to ridership trends and district needs. The Mart project would generate fewer trips than the office project and operating characteristics would not be affected.

TABLE 18

P.M. PEAK PERIOD OPERATING STATISTICS FOR GOLDEN GATE TRANSIT

	Peak Period (1 hour/2 hour) Statistics		
	Existing	Projected W/O Office Project	Projected W/Office project
Seats	6,860/12,250	8,575/15,310	8,575/15,310
Passengers	6,620/10,410	8,065/12,595	8,085/12,630
Load Factors[1]	0.97/0.85	0.94/0.82	0.94/0.82

[1]District policy allows a maximum load factor of 1.25.

d. AC Transit

AC Transit operates about 200 buses outbound from the Transbay Terminal during the p.m. peak hour.[16] Based on a capacity of 125% of available seating (AC policy accepts 25% standees) and an average of 50 seats per bus, space for 12,500 passengers is available. With a current patronage of 8,900 during this peak hour, the overall capacity reserve is 3,600. Within the peak hour certain of the peak runs have higher load factors and therefore no excess capacity.

The proposed office project and cumulative development would generate about 2,800 trips, within the 3,600-person capacity reserve. (The mart project would not add to AC Transit patronage.)

e. SamTrans[17]

As shown in Table 19, page 80, the projected ridership would increase by 420 peak hour passengers and 620 passengers during the peak two-hour period. Projected ridership would reach the system's capacity. The district has no specific capacity increases planned for the San Francisco service.

TABLE 19

SAMTRANS OPERATING STATISTICS

	Peak Period (1 hour/2 hour) Statistics		
	Existing	Projected W/O Office Project	Projected W/Office project
Seats	1,565/2,395	1,565/2,395	1,565/2,395
Passengers	1,565/2,395	1,980/3,005	1,985/3,015
Load Factors[1]	1.00/1.00	1.27/1.25	1.27/1.26

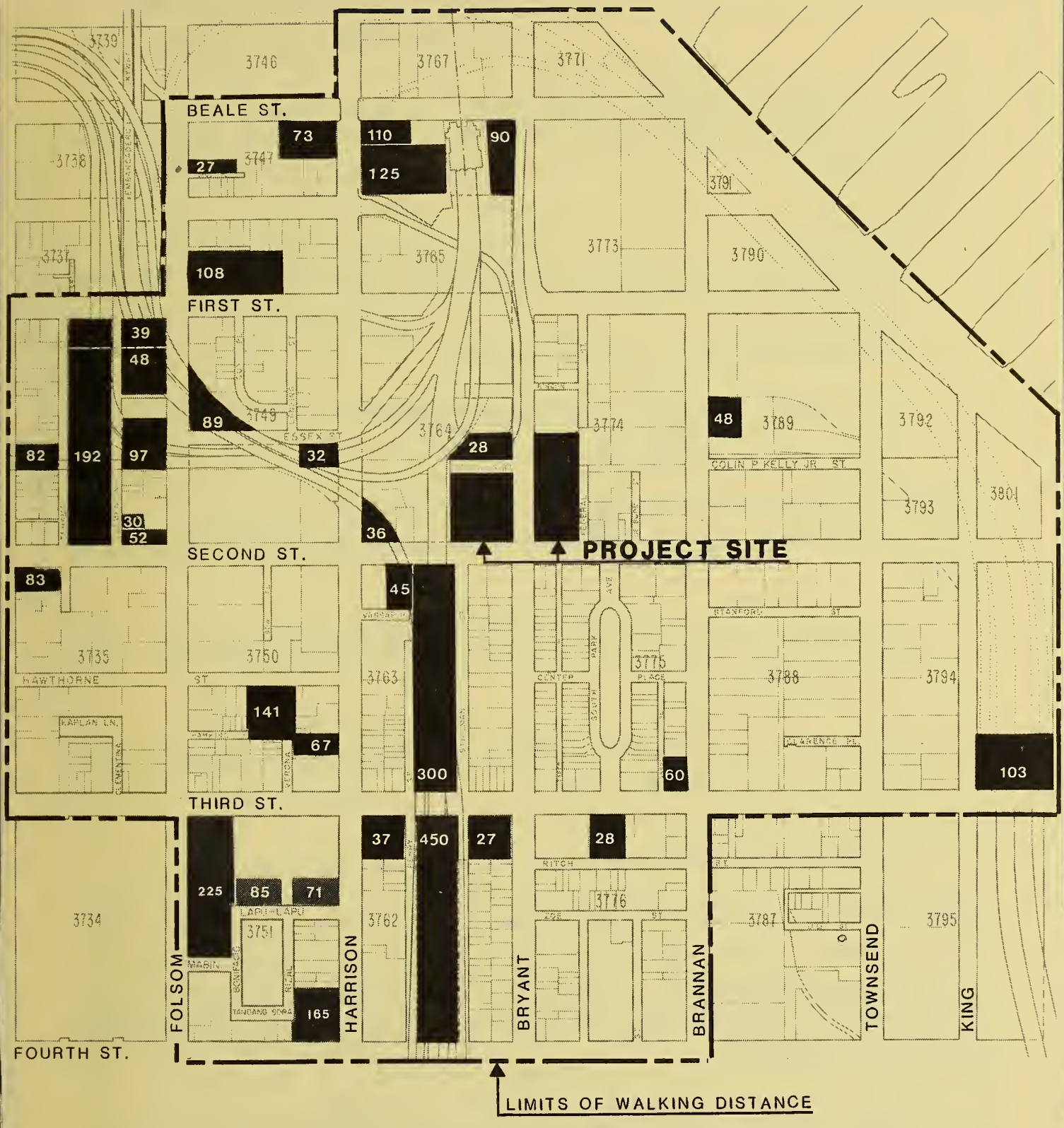
[1]District allows a maximum capacity of 125% of seats, a load factor of 1.25.

f. Southern Pacific[18]

With cumulative development, ridership would increase by about 720 peak hour passengers and 1,070 passengers during the peak two-hour period. The projected ridership would remain within the system's capacity.

5. Parking Impacts

A review of off-street public parking facilities has been conducted for the project area (Figure 15, page 81).[19] Within a one-quarter mile (2-3 block) walking distance of the site a total of 3,400 spaces are available. During a mid-day field review, facilities were about 85% occupied with 2,900 spaces occupied and 500 spaces vacant.



66 PUBLICLY AVAILABLE OFF-STREET LOTS & GARAGES (NUMBER OF SPACES)

SCALE 0 500 1000 FEET

SOURCE: EIP

Second Street Square

PARKING FACILITIES

15

The project's parking demand has been calculated on the basis of trip generation and modal split data.

a. Office Project

- 2,490 daily office and computer area work trips x 56% auto/1.25 persons per auto /2 one-way trips per auto = 560 long-term spaces.
- 210 daily retail and recreation area work trips x74% auto/1.25 persons per auto/2 one-way trips per auto = 60 long-term spaces
- 8,250 daily non-work trips x 10% auto[6]/1.25 persons per auto /2 one-way trips per auto /5.7[20] turnovers daily = 60 short-term spaces.
- Total project demand = 680 spaces.

Because the project would replace a prior use, consideration has also been given to the net new parking demand in the project area. The previous site parking demand is calculated as follows:

- 700 work trips x 59% auto /1.25 persons per auto /2 one-way trips per auto = 165 long-term parking spaces.
- 525 non-work trips x 10% auto/1.25 persons per auto /2 one-way trips per auto /57 turnovers daily = 5 short-term spaces.
- Total demand = 170 spaces

The previous site use included 25 parking spaces -- the site's net off-street demand was about 145 spaces. The office project's demand for 680 spaces would exceed the proposed 298 on-site spaces by 382 spaces. In comparison to the prior site use, the proposed project would increase off-site parking demand in the project area by 227 spaces, within the 500 spaces currently available.

With the added parking demand, the parking occupancy in the area surveyed would increase from 85-91%. Further parking demand would be generated by cumulative South of Market and downtown development. This cumulative demand would saturate available parking in the project area. Available off-street parking is shown in Figure 15, page 81.

The parking requirement of the Planning Code has been calculated as follows:

- 283,000 s.f. net office area @ 1/500 s.f.	=	566 spaces
- 34,000 s.f. net computer area @ 1/1,000 s.f.	=	34
- 25,500 s.f. net recreational area @ 1/500 s.f.	=	51
- 21,250 s.f. net retail area @ 2/1,000 s.f.	=	43
- 12,750 s.f. net storage area	=	0
	TOTAL	694 spaces

The parking credit under the Planning Code has been calculated as follows:

- 315,000 net s.f. printing @ 1/1,500 =	210	spaces
less spaces provided	(25)	
	185	spaces

The project's parking deficit (per the Code) would be:

- 694	total spaces required
(185)	credit
509	spaces net requirement
(298)	spaces provided
211	space deficit

It should be noted that the Planning Code requires that off-street parking be independently accessible. The majority of the 298 spaces provided would not meet this criteria.

Peak-hour traffic generation from the office project's parking garage has been calculated on the basis of SOMA employee travel surveys. If all of the spaces are for employees, about 180 outbound trips would occur during the p.m. peak hour. (If a portion of the spaces are short-term, peak-hour activity would be comparable.) This traffic would introduce new vehicle conflicts at Second/Federal. The conflicts would, however, be of a short duration and would not have a measurable effect on service levels at nearby intersections.

Off-street freight loading needs (as per Planning Commission guidelines)[21] have been calculated as follows:

- 333,000 s.f. gross office area @ 0.1/10,000 = 3.3 spaces

- 95,000 s.f. gross computer, retail and recreational area @ 0.21/10,000 = 2.0

Total = 5.3 spaces

The project would include five freight loading spaces.

b. Trade Mart Project

- 805 daily Mart work trips x 72% auto/1.25 persons per auto/2 one-way trips per auto = 230 long term spaces
- 150 daily retail work trips x 74% auto/1.25 persons per auto/2 = 45 long term spaces
- 4,810 daily non-work trips x 10% auto/1.25 persons per auto/2 one-way trips per auto/5.7 turnovers daily = 35 short term spaces
- Total project demand = 310 spaces

The site's net new demand for parking would be 140 spaces. The project would include 298 spaces and there would not be a measurable increase in the existing parking occupancy (85%) in the area surveyed. As with the office project, however, cumulative development's parking demand would result in saturated (100% occupancy) parking in the project area.

The Planning Code (Section 151) parking requirement has been calculated as follows:

- 342,500 s.f. net trade mart area @ 1/1,000 s.f. = 343 spaces
- 21,250 s.f. net retail area @ 2/1,000 s.f. = 43
- 12,750 s.f. net storage area = 0

Total = 386 spaces

With a net parking credit of 185 spaces, the project's deficit (as per the Code) would be:

-	386	total spaces required
	(185)	space credit
	201	spaces net requirement
	298	spaces provided
	0	space deficit

As stated above, the 298 spaces provided do not meet the Code requirement for independently accessible off-street parking.

Peak-hour traffic to and from the trade mart project parking would have effects comparable to those discussed for the office project alternative.

Based upon Planning Commission guidelines, the mart project's off-street freight loading needs have been calculated as follows:

-	403,000 gross s.f. mart area @.21/10,000	= 8 spaces
-	25,000 gross s.f. retail	= 1 space
	Total	= 9 spaces

The project would include five spaces, and excess demand would be expected to load/unload curbside along adjacent streets. During major high technology trade shows in the City, the mart's truck activity would be greatly increased. During these periods the five truck spaces may be insufficient and trucks could double-park along adjacent streets.

6. Pedestrian flows

Based upon field observations existing pedestrian flows along Second and Bryant Streets are "open."

With a portion of the auto trips to and from the projects' on-site parking and a portion of the retail trips internal to the project, an estimated 600-700 p.m. peak-hour pedestrian trips would be generated by the office project. Similarly, the trade mart project would generate about 300-350 p.m. peak-hour pedestrian trips.

The proposed projects' primary accesses would be on Bryant Street. If one-half of the projects' pedestrian travel occurred on the Second Street sidewalk (to/from the north)

during the peak hours, the existing pedestrian flows (about 90 persons per hour) would increase by about 425 persons.[22] With this increase, the pedestrian flows would degrade slightly to the "unimpeded" range.

With the potential pedestrian interaction between Buildings 1 and 3, the project would include a new pedestrian bridge between the buildings. (An existing bridge is located about 15 feet east of the proposed location.)

7. Construction Activity

Based upon the project's construction costs and 9-month construction schedule, it is estimated that an average of approximately 280 construction workers would be employed on-site (see Section IV.B., Employment, Housing and Fiscal Factors, page 49). If all of the construction employees drive with limited ridesharing and similar work shifts, about 250 auto trips would be generated during the employees' evening commute period. Because construction employees tend to work earlier shifts, it is likely that only a portion of this travel would occur during the 4:30-5:30 p.m. peak hour.[23] The construction employee trips would not degrade traffic service levels on the adjacent street network. Employees would seek parking in the project area, competing with other employees and visitors for the limited parking currently available.

Construction activity could also encroach into sidewalk areas, disrupting pedestrian flow. Because pedestrian volumes are light (fewer than 100 persons per hour on any sidewalk or crosswalk adjacent to the site), even a reduction to a minimal sidewalk width of 3-5 feet would allow existing flows to remain "open." If construction activity encroached into parking lanes along Second and Bryant Streets, some on-street spaces would be temporarily removed but traffic service levels would not be measurably affected.

8. Consistency With Comprehensive Plan

The proposed project is generally consistent with the following objectives and policies of the Transportation Element of the City's Comprehensive Plan:

General Objectives and Policies

Objective 1, Policy 2

Give priority to public transit as the means of meeting San Francisco's transportation needs, particularly those of commuters.

Objective 2, Policy 6

Provide incentives for the use of transit, carpools and vanpools, and reduce the need for new or expanded automobile and automobile parking facilities.

The project sponsor would provide shuttle bus service and implement a TSM program.

Pedestrian Circulation Plan

Policy 3

Ensure convenient and safe pedestrian crossings.

The project sponsor would provide decorative paving on Bryant Street to indicate crosswalk area.

The proposed project may not be consistent with Citywide Parking Plan, Objective 1, Policy 1.

Assure that new or enlarged parking facilities meet need, locational, and design criteria.

Parking spaces provided on Federal Street could create conflicts between pedestrian movements of those using these spaces and vehicles using Federal Street to access underground parking due to the lack of sidewalks.

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[1]San Francisco Department of City Planning, South of Market Transportation Survey, February 1983.

[2]San Francisco Department of City Planning, Guidelines for Environmental Review, July 1983.

[3]Caltrans, Thirteenth Progress Report on Trip Ends Generation, June 1981, page 87.

[4]Institute of Transportation Engineers, Trip Generation, Virginia, 1979.

[5]ASCE, Transportation Journal, "Intra-CBD Secondary Travel Patterns of Downtown Workers," January 1982, pages 15-20.

[6]Donald Preiser, Vice President, Western Merchandise Mart, meeting on March 23, 1983.

[7]Roger W. Mack, President, Alternate Decisions Company, meeting on March 30, 1983.

[8]List of cumulative projects under construction, approved or under formal review as of June 1, 1983 appears as Table D-1, page A-54.

[9]Counts conducted by San Francisco Department of Public Works in January, March and May, 1981.

[10]Scott MacCalden, Senior Engineer, Highway Operations Branch, Caltrans, telephone conversation, December 28, 1981.

[11]San Francisco Department of Public Works, 1983 Downtown Cordon Count, 1983.

[12]Charles Romeyn, Muni Schedules Department, telephone conversation, February 8, 1983.

[13]BART Planning Department, Representative P.M. Peak Weekday Load Factors for October - December 1982.

[14]Ward Belding, BART Planner, telephone conversation, December 7, 1982.

[15]Alan Zahradnik, Golden Gate Transit Planner, telephone conversation, August 4, 1983.

[16]Jeff Allan, AC Transit Planner, telephone conversation, August 4, 1983.

[17]Jim DeHart, SamTrans Planner, telephone conversation, August 4, 1983.

[18]Ben Chuck, Senior Transportation Planner, Caltrans, telephone conversation, August 5, 1983.

[19]Field review by EIP Corporation on January 13, 1982.

[20]National Cooperative Highway Research Program, Urban Travel Patterns for Hospitals, Universities, Office Buildings and Capitals, Report No. 62, 1969.

[21]Guidelines adopted by San Francisco Planning Commission on January 21, 1982, described in Resolution No. 9286; guidelines based on findings in the San Francisco Center City Pedestrian Circulation and Goods Movement Study, September 1980, Wilbur Smith and Associates.

22Pedestrian flow calculated as follows: 90 existing persons + 425 persons = 515 total persons per hour

515 persons/60 minutes/5.5 feet effective sidewalk width = 1.6 persons/minute/foot of width "unimpeded" pedestrian flow.

[23]Gail Bloom, Department of City Planning, telephone conversation, September 2, 1982.

D. AIR QUALITY

Construction activities would generate pollutants in the project vicinity. Trucks and equipment would release exhaust that would affect neighboring buildings during construction hours. Demolition and remodeling activities would generate suspended particulate matter. Emission factors upon which to base estimates of the resulting atmospheric concentrations of particulates are not available. It is unlikely, however, that violations of air quality standards would result, since much of the activity would occur in the interior of the existing structure. Construction impacts would be similar for both the office and trade mart plans.

Direct atmospheric emissions from the operation of either of the proposed projects would result from the combustion of natural gas on-site for water and space heating. Natural gas is a relatively clean-burning fuel; therefore, no visible plume would occur. Exhaust gases would be emitted at rooftop level and would be diluted to concentrations well below the ambient air quality standards before reaching ground level. Impacts would be similar for both the office and trade mart plans.

The project would act as an indirect source of atmospheric emissions because of the vehicular traffic it would generate. On the local scale carbon monoxide (CO) is the most important pollutant emitted by automobiles. Projected CO concentrations for 1984 for four locations near the site were calculated assuming that the project is built. Also, projected CO concentrations were calculated assuming that the proposed project and other planned and proposed projects in the vicinity are built. These results are shown in Table 20, page 90. The results represent the exposure a person would have at the worst curbside location during worst-case meteorological conditions. The highest concentration would occur during the p.m. peak hour, most likely on a winter evening.

The results indicate that no violations of state or federal air quality standards would occur with either the office project or the trade mart or with either project added to cumulative development. Since CO concentrations drop off rapidly with distance from curbside, occupants of nearby buildings would be exposed to lower concentrations of CO than reported in Table 20.

Cumulative development would result in CO concentrations in 1988 which would be similar to 1984 levels without cumulative development. This is because ongoing state and federal emissions controls are expected to result in lower vehicular emissions rates in

TABLE 20

CURBSIDE CARBON MONOXIDE CONCENTRATIONS

	1982 Existing		1984 With Office Project		1988 Cumulative Plus Office Project[1]		1984 with Trade Mart		1988 Cumulative Plus Trade Mart	
	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1hr	8 hr	1 hr	8 hr
Harrison/ Bridge offramp	12	7	11	6	11	7	11	6	11	7
Second/Bryant	13	8	12	7	11	7	11	7	11	7
2nd/Harrison	14	8	13	7	12	7	12	7	12	7
2nd/Brannan	12	7	11	7	11	7	11	7	11	7
Background[2]	7.0	5.3	6.5	5.0	7.4	5.7	6.5	5.0	7.4	5.7

State 1-hour CO standard = 20 ppm
Federal 8-hour CO standard = 9 ppm

[1] Calculations were made using the procedures recommended in California Air Resources Board, Research Division, Air Quality Modeling Section, Estimating Carbon Monoxide Concentrations for Hot Spots Analysis, Sacramento, CA, May 1980.

[2] Background concentrations are based upon one half the highest measured values in San Francisco in 1980-1981 and adjusted to account for regional pollution controls in accordance with the estimates contained in the 1982 Bay Area Air Quality Plan. The 1988 background values include an extra 35% to account for cumulative growth in traffic in the downtown area.

1988 than in 1984; the predicted additional traffic volumes in 1988 offset a portion of the expected gains from the "cleaner" cars.

The regional impact of the office project would be due to the increase in vehicle miles traveled (VMT) associated with the project. Based on the predicted number of project-generated trips and their associated lengths, the daily regional increase of VMT due to the project is estimated at 26,000. Using composite emission factors supplied by the California Air Resources Board and assuming an average trip speed of 20 mph, total regional emissions from the project traffic have been estimated in Table 21, page 92. Since the incremental increase in hydrocarbon and oxides of nitrogen emission are both about .01 of 1984 predicted regional totals, it is not expected that the resulting increase in downwind ozone levels would be of sufficient magnitude to be measured or modeled accurately.

The regional impact of the trade mart would be smaller than that of the office project because of the smaller amount of traffic generated by the trade mart plan. However, in combination with emissions from other projects either of the proposed project plans could contribute to measurable increases in ozone concentrations at downwind locations and possible violations of the ozone air quality standard at locations which are already close to exceeding this standard.

The proposed project plans would be consistent with the growth projections and the specific transportation control measures contained in the Bay Area Air Quality Plan. Therefore, both of the projects would be consistent with that plan.

TABLE 21

REGIONAL VEHICLE EMISSIONS
(tons/day)

Pollutant	1984 Office[1] Emissions	1984 Trade[2] Mart Emissions	1984[3] Regional Total Emissions	Fractional Increase Due to Office	Fractional Increase Due to Trade Mart
Carbon Monoxide	.86	.50	2,700	.0003	.0002
Hydrocarbons	.06	.04	560	.0001	.0007
Nitrogen Oxides	.07	.04	570	.0001	.0007
Particulates	.007	.004	510	.00004	.0002
Sulfur Oxides	.07	.04	190	.0001	.0002

[1]Based upon a daily average of 26,000 vehicle miles traveled.

[2]Based upon a daily average of 15,000 vehicle miles traveled at 20 miles per hour.

[3]Association of Bay Area Governments, 1982 Bay Area Air Quality Plan, California, July 1982.

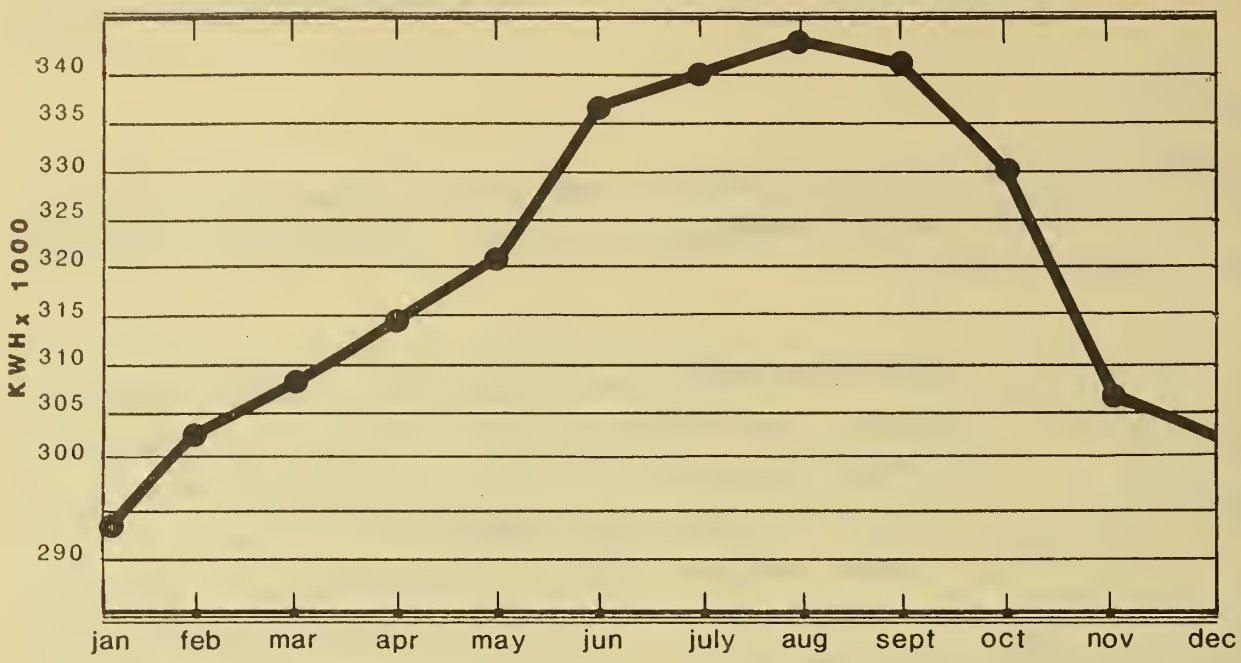
E. ENERGY

Construction of either the office or trade mart would consume about 20 billion BTU of energy in the form of electricity, diesel fuel and gasoline.[1] This is the energy equivalent of about 3,600 barrels of oil.

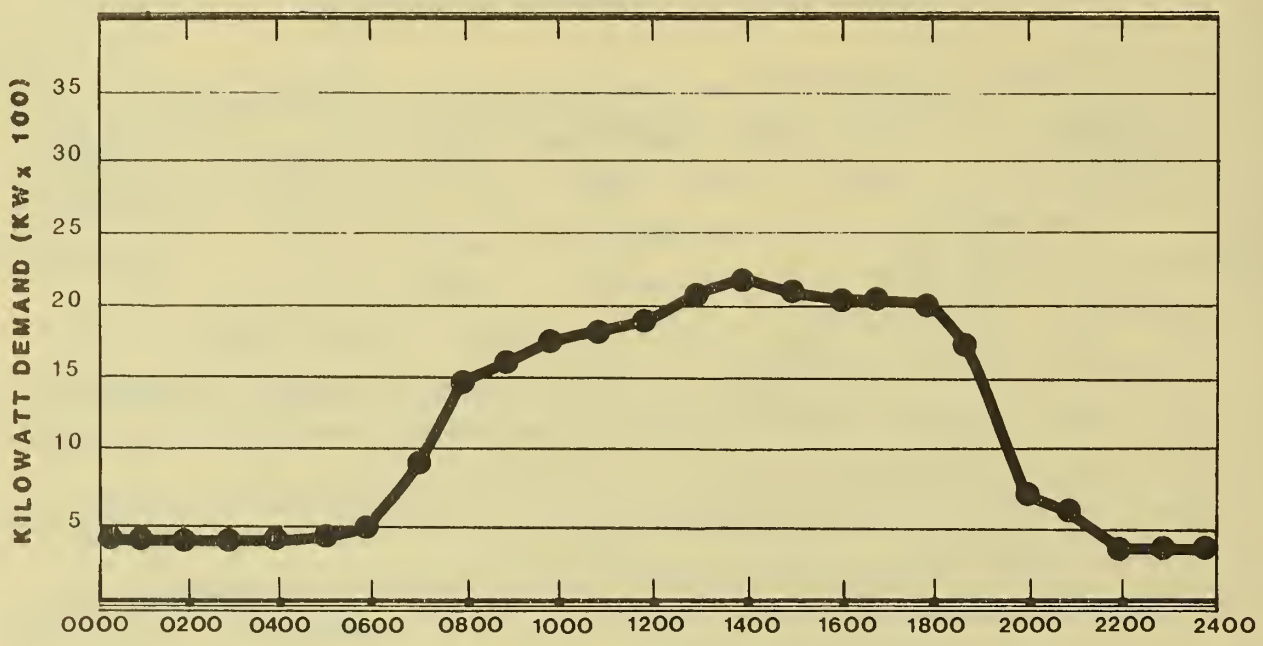
Based upon estimates made by G.M. Simonson and T.R. Simonson, Consulting Engineers, the office project would consume about 1.9 kilowatt hours of electricity per square foot per month equal to about 800,000 kwh per month. It would consume about 335 BTU per square foot per day of natural gas. Average monthly total energy consumption would be about 8.6 billion BTU of energy, equivalent to about 1,500 barrels of oil. Connected kilowatt load would be about 3,600 Kw. Load profiles would be expected to appear similar in shape to those shown in Figures 16 and 17, pages 94 and 95.[2] Electrical use would reach a peak of about 3,200 Kw on hot summer afternoons; this would coincide with PG&E's system-wide peak. Natural gas use would reach a peak of about 300 therms on cold winter day, which would also coincide with PG&E's systemwide peak.

Estimates of the energy consumption of the Trade Mart project were prepared by Marion, Cerbatos and Tomasi, Inc.[3] The average monthly total energy use would be 4.3 billion BTU or 800 barrels of oil. The Trade Mart project would consume about 2.6 kwh per square foot of conditioned floor area per month for Buildings 1 and 2. Electrical consumption for Buildings 3 and 4 would be about 2.7 and 2.4 kwh per square foot per month, respectively. Total monthly electrical use would be about 560,000 kwh for Buildings 1 and 2 and 616,000 and 224,000 for Buildings 3 and 4, respectively. Connected kilowatt load would be 2,800 KW for Buildings 3 and 4, respectively. The total connected kilowatt load would be 7,600 KW. These figures are based upon an assumption of 6 watts per square foot for lighting and small computer equipment and include elevator loads as well. Since mechanical cooling would be included in the proposed project, electrical use would peak during hot summer afternoons when demand for air conditioning is highest. This would coincide with PG&E's system-wide peak.

Natural gas use for Buildings 1 and 2 would total about 110 BTU per square foot per day. Buildings 3 and 4 would consume about 100 and 180 BTU per square foot per day, respectively. Usage would reach a peak on cold winter days, most likely in January, which would coincide with PG&E's system-wide peak. Peak use for Buildings 1 and 2 would be about 400 therms per day, while for Buildings 3 and 4 would be about 350 and 270 therms



MONTHLY CONSUMPTION



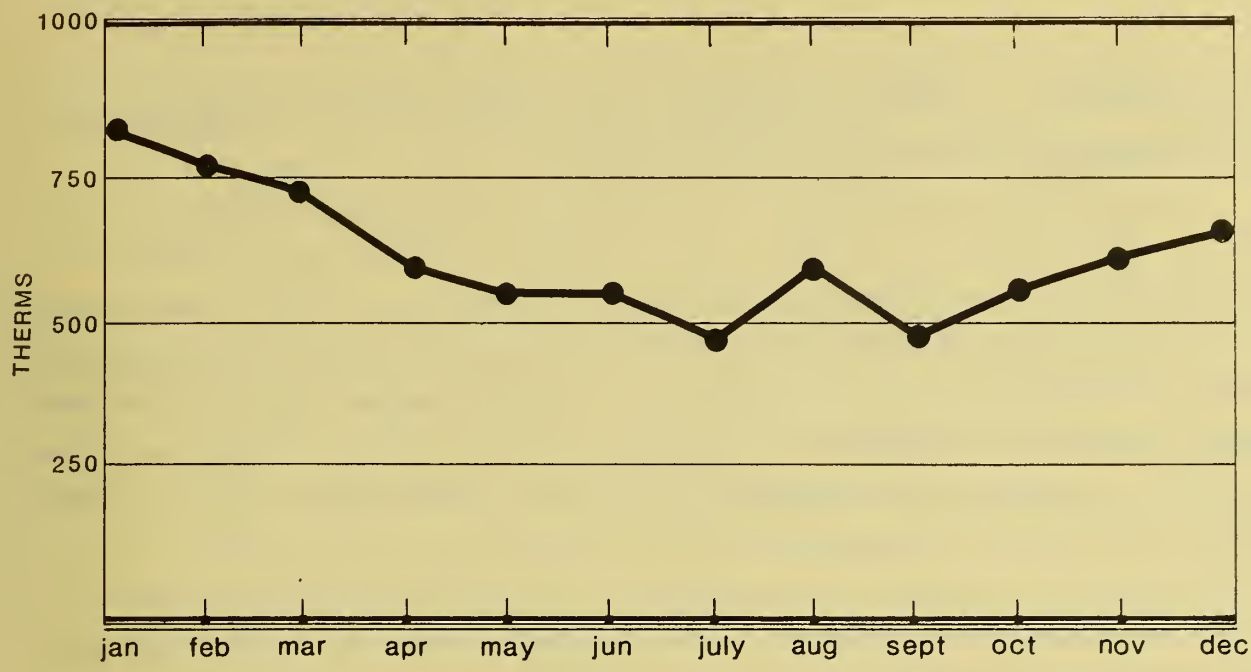
HOURLY CONSUMPTION

SOURCE: Department of City Planning, City and County of San Francisco, Final EIR, 315 Howard Street Office Building, Certified August 21, 1980

These figures are typical of electrical consumption patterns in San Francisco insofar as monthly consumption patterns vary based largely upon outside temperature and hourly consumption varies with occupancy rates.

Second Street Square

ESTIMATED ELECTRICAL CONSUMPTION 16



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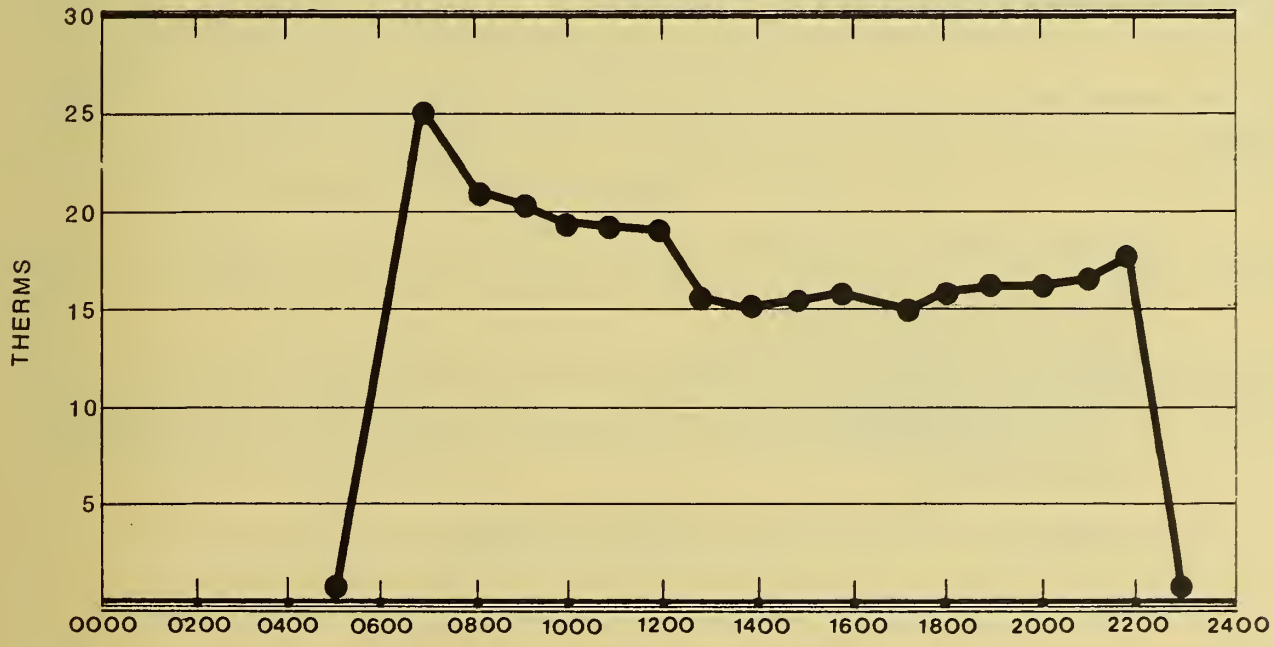

HOURLY CONSUMPTION

SOURCE: DEPARTMENT OF CITY PLANNING
FEIR, Spear and Main Street Office Building,
San Francisco, May 1982

Second Street Square

TYPICAL GAS CONSUMPTION

17

per day, respectively. Load curves specific to this project would be expected to be similar in shape to those presented in Figures 16 and 17.

The project would comply with Title 24 energy standards which allow up to 126,000 BTU per square foot per year for heating, ventilating, cooling, service water heating, and lighting. Preliminary calculations indicate that actual consumption for these uses would be about 115,000 BTU per square foot per year for the office project (average of the four buildings involved). For the trade mart project annual energy consumption would be 117,000 BTU per square foot for buildings 1 and 2, 114,000 BTU per square foot for Building 3 and 113,000 BTU per square foot for Building 4.

A report on electrical and mechanical considerations for the office project has been prepared by G.M. and T.R. Simonson, Consulting Engineers, and is on file with the Office of Environmental Review, 450 McAllister Street, 5th floor. The report describes the tentative recommendation for the mechanical and electrical design, which encompasses the principal energy-using components of the project.

The report specifically recommends a series of energy conservation measures. These include:

individual metering of tenants

automated energy management
- automated lighting schedule
- economizer cycle on air handlers
- controlled warm-up in winter
- starting and stopping fans
- billing functions

no mechanical cooling (retrofits would be possible)

operable windows where feasible

Motor vehicle travel generated by the project would consume about 570,000 gallons of gasoline annually.

Cumulative increases in energy consumption in downtown San Francisco by approved and recently proposed projects (18.4 million square feet, Appendix D, Table D-2, page A-59) would increase annual electrical consumption by more than 300 million kilowatt hours

which would be approximately 13% of PG&E's projected systemwide increase over the next ten years.[4] This project would also increase annual natural gas consumption by more than 5.2 million therms. Total increase in building operation energy demand would be about 3.6 trillion BTU annually, equivalent to about 600,000 barrels of oil per year.

Cumulative demand for electricity by approved and recently proposed projects in downtown San Francisco would increase electrical demand in the PG&E service area by about 0.4%. PG&E's reserve margin, the amount of excess capacity over demand that serves as a safety allowance, is estimated at about 14% for 1982. This reserve margin is projected to rise to about 25% in 1983; as the Diablo Canyon nuclear power plan comes on line, then decline slowly during the late 1980's to about 18% in 1990. The additional electrical demand created by the project and other projects approved or under consideration by the City could be accommodated by existing and planned PG&E facilities.

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[1]This calculation is based upon consumption estimates contained in Energy Conservation in Buildings and Industrial Plants, by Milton Meckcler (McGraw-Hill, 1981), page 5. The consumption rates were discounted by 50% (a rough estimate) to account for the nature of the project as renovation rather than new construction.

[2]T.R. Simonson, P.E., Partner, G.M. Simonson and T.R. Simonson, Consulting Engineers, San Francisco, telephone conversation, February 3, 1983.

[3]Alfred M. Marion, Electrical Engineer, Marion, Cerbatos and Tomasi, letter, April 29, 1983.

[4]Pacific Gas and Electric Company, 1982, Forecast of the Demand for Electricity Within the Pacific Gas and Electric Company Service Area, 1982-2002; Electricity Technical Supplement.

F. GROWTH INDUCEMENT

1. Office Project

At full operation, the office project would provide about 1,385 permanent jobs, including office, managerial, retail sales and maintenance positions. To the extent that the building is fully leased, and the availability of its space does not create permanent vacancies in other Bay Area office buildings, total employment in the Bay Area could additionally increase by about 1,425 permanent jobs through the multiplier effect.

The project would represent an additional 1.9% of net new office space in the downtown and South of Market area. To the extent that the project would contribute to the attraction of new residents or commuters who otherwise would not have been attracted to San Francisco or the Bay Area, the demand for commercial, social and municipal services would be increased.

The proposed office project would add 333,000 net new gross square feet of office space to the site, which together with other office development, could stimulate additional office growth in the vicinity on lots currently used for parking or occupied by low-rise structures containing business support services (particularly in the South of Market area). Office development in this part of the City is part of a continuing land use succession process whereby the former industrial blue collar uses have been replaced by offices. In economic terms, land use succession process occurs because the "highest and best use" of the land is something other than the present use.[1] "Highest and best use" is defined as that land use and land use intensity which will bring the highest price or rent given current market conditions. The "highest and best use" is one that optimizes the allowable floor area, density and height permitted for the site, provided there is a market for the amount and type of space created. It is possible that the successful conversion and marketing of the Second Street Square project could contribute to a continuation of the trend toward office use in former industrial space.

2. Trade Mart Project

The proposed trade mart project would add 343,000 gross square feet of trade mart space, 60,000 gross square feet of office space, 25,000 gross square feet of accessory retail space, and 15,000 gross square feet of storage space. Because the trade mart concept represents a less intense use of space compared to the proposed office project, the

growth-inducing effects would be proportionately less. The trade mart would employ about 440 persons directly and indirectly, through the multiplier effect, would produce about 524 jobs.

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[1] "Highest and best use" is used here in a strictly economic sense, not as a qualitative or policy statement.

V. MITIGATION MEASURES WHICH WOULD MINIMIZE THE POTENTIAL IMPACTS OF THE PROJECT

In the course of project planning and design, measures have been identified that would reduce or eliminate potential environmental impacts of the proposed project whether it be the office building or trade mart. Some of these measures have been or would be adopted by the project sponsor or contractors (mitigation measures included as part of the project and presented in the Initial Study are reproduced below), some may be implemented by public agencies, and the remainder are not included in the project. The City Planning Commission could require that some or all of these measures be included as conditions of project approval, if found to be warranted.

The mitigation measures listed would be the same for the office project or the trade mart. Each mitigation measure and its status is discussed below.

A. VISUAL QUALITY AND URBAN DESIGN

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

The project sponsor recently planted street trees along Second Street, Bryant Street and Federal Street.

All four of the projects' existing buildings were recently painted to enhance architectural features.

B. HOUSING

MITIGATION MEASURE INCLUDED IN THE PROPOSED PROJECT

The City Planning Commission's Office Housing Production Program stipulates mitigation of housing impacts. The office project is estimated to add demand for 234 housing units. The project sponsor would cause 234 housing units to be constructed off-site.

C. TRANSPORTATION

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

The project sponsor would initiate a comprehensive transportation system management (TSM) program aimed at reducing the peak-hour effects of project travel. The project sponsor would:

- Designate a permanent Transportation Coordinator as part of the building management staff
- Encourage the investigation and implementation of flex-time programs by providing information on the program's advantages, feasibility, etc.
- Develop a parking program with priority to ride sharing vehicles
- Sell Muni Fast Passes and other monthly commute passes on-site
- Make transit routes and schedule information available to employees
- Develop and maintain carpool and vanpool matching services
- Encourage bicycle use

In addition, the sponsor would implement a shuttle bus service, linking the project site with the SP Terminal, BART, Muni Metro, Transbay Terminal and other points as established by demand. The service would operate at high frequency during peak commute period. During non-peak periods, the bus would follow a route between the project and major office headquarters in the financial district. For the trade mart project, the sponsor would maintain shuttle bus service to transport persons between the mart, major office firms in the financial district, major trade shows and hotels.

The project sponsor would, in consultation with the Municipal Railway, install eyebolts or make provisions for direct eyebolts for Muni trolley wires on the proposed building wherever necessary or agree to waive the right to refuse the attachment of eyebolts to the proposed building if such attachment is done at City expense.

Thirty bicycle and motorcycle spaces would be provided in the Building 3 garage (in excess of the 15 spaces required by City code).

Although the success of an overall TSM program cannot be precisely predicted, considerable benefits are possible. With the shuttle bus service, transit promotion and ridesharing efforts implemented, a program goal would be a reduction in auto travel mode to 19% of the total commute travel and an increase in auto occupancy to 1.4. These characteristics would be comparable to existing conditions in the downtown area. If this were achieved, the office project's net long-term employee parking demand would be reduced from 560 spaces to about 170 spaces.

Within one year after completion of the project, the project sponsor will conduct a survey, in accordance with methodology approved by the Department of City Planning, to assess actual trip generation, trip distribution, and modal split pattern of project occupants, and actual pick-up and drop-off areas for carpoolers and vanpoolers. The results of this survey shall be made available to the Department of City Planning and at that time the project sponsor would meet with the City to discuss the findings and make appropriate adjustments to the TSM program if necessary.

If this survey determines that an unmet parking demand exists (not more than 211spaces for the office project; none for the trade mart)[1] such demand would be met within three years following the issuance of a Temporary Certificate of Occupancy by either of the following two methods:

a. the project sponsor through their own arrangements, spaces to be located within 2,000 feet of the project site or other locations acceptable to the Department; or

b. through demonstrated improved efficiencies and effectiveness of the TSM program.

MITIGATION MEASURES NOT INCLUDED IN THE PROPOSED PROJECT

1. Should Ordinance No. 224-81 be declared invalid by the Courts, the project sponsor shall participate in any subsequent equivalent mitigation measures to be adopted by the Commission or the City, in lieu thereof which measures will apply to all projects similarly situated.

2. The Planning Commission will consider the application for Conditional Use authorization for a Planned Unit Development (PUD). Under Section 304(d)2 of the Planning Code, the Commission may require that the unmet parking demand, as determined by the survey taken one year following occupancy as described above, shall be met in full by one or more of the following:

    a. the project sponsor through their own arrangements, spaces to be located within 2,000 feet of the project site or other locations acceptable to the Department; or

b. through demonstrated improved efficiencies and effectiveness of the TSM program; or

c. the project sponsor shall make a cash contribution to the San Francisco parking Authority of $1,500 per parking space (the unmet demand determined by the survey discussed above) adjusted annually from the date of Planning Commission Action based on the U.S. Department of Commerce Construction Component of the Consumer Price Index for the San Francisco-Oakland SMSA; or

d. should the City institute a program to expand parking facilities, project sponsor shall contribute funds for this purpose, in an amount proportionate to the unmet demand created by the project through an equitable funding mechanism enacted by the City.

The project sponsor considers that the above mitigation measures represent an inequitable burden on the proposed project. The project is designed to accommodate required parking for vehicles and bicycles. Moreover, additional mitigation measures have been included in the project (i.e. TSM program, shuttle bus, etc.) that will effectively reduce congestion and parking demand.

D. NOISE

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

Sound insulation features will be installed by the project sponsor to reduce impacts from traffic noise nearby (see Figures 3 and 6, pages 11 and 15, for building configuration). These will include:

Building No. 1: Replace existing north facade windows with new acoustic double glazing; all windows not adjacent to the freeway will also be replaced with laminated glass and some will have an operable section to provide natural ventilation.

Building No. 2: Reduce north, east and west facade openings by 50% with panels of a finish to match the adjacent surface texture; the balance of the openings will be glazed with acoustic double glazing except on the south side which will be laminated glass. No windows in this building will be operable due to the high exterior noise levels.

Building No. 3: Replace existing windows at east, north, west and partial south facades with new laminated acoustic glass; all windows will have an operable section to provide natural ventilation.

Building No. 4: Replace existing windows with laminated acoustic glass in new aluminum frames; all windows will have an operable section to provide natural ventilation.

An interior pleasant sound mask will be used in portions of the project where it is necessary to cover unpleasant exterior noise.

The project sponsor will include a specific requirement in the construction contract that the contractor muffle equipment so that noise would not exceed limits stated in the City Noise Ordinance (Article 29, San Francisco Administrative Code, 1972).

E. AIR QUALITY

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

Contractors would maintain and operate construction equipment to minimize exhaust emissions.

Contractors would be required to cover the loads of trucks carrying waste materials from the site in order to reduce dust and potential spillage onto streets.

Construction equipment would be limited to 15 mph to reduce dust. During construction, drivers of trucks in loading or unloading queues could turn their engines off when not in use to reduce vehicle emissions.

Vehicular emissions due to project-generated traffic would be reduced by measures to reduce traffic volumes and/or congestion. Such measures are discussed in the transportation section of this report.

The interior of the buildings would have a special bellows system to ensure high standard of air purity.

F. UTILITIES/PUBLIC SERVICES

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

The project sponsor will encourage tenants to recycle white paper and computer cards.

The project will have a complete internal security system with security guards and video surveillance.

The project will have a sprinkler system with 24-hour fire monitoring capability and central alarm.

G. GEOLOGY

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

Buildings 1 and 4 will be upgraded to resist seismic loading by the addition of a steel frame on new spread footings with a 200% safety factor against ultimate soil failure under designed loads. Building 3 will also have new spread footing foundations.

Specific construction observation, foundation, drainage and retaining wall design recommendations contained in the geotechnical investigation for the site would be included in the project.

H. ENERGY

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

A report by Marion, Cerbatos and Tomasi, Consulting Engineers, contains tentative recommendations for the mechanical and electrical design of the proposed project. The report specifically recommends a series of energy conservation measures which would be incorporated into the design. They include:

individual metering for tenants

automated energy management

- automated lighting schedule
- economizer cycle on air handlers
- controlled warm-up in winter
- starting and stopping fans
- billing functions

no mechanical cooling (retrofits would be possible)

operable windows where feasible

I. HAZARDS

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to ensure coordination between the City's emergency planning activities and the project plans and to provide for building occupants in the event of an emergency. The

project plans would be reviewed by the Office of Emergency Services and implemented by building management before issuance by the Department of Public Works of final building permits.

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[1] Code requirement minus former requirement minus parking provided.

VI. UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL EFFECTS

The following are suggested significant impacts subject to final determination by the City Planning Commission as part of their certification process. Chapter VI. of the Final EIR will be revised, if necessary, to reflect the Commission's findings.

This chapter identifies impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the proposed project, or other mitigation measures that could be implemented, as described in Chapter V., Mitigation Measures, pages 100 through 106.

Cumulative Office Development

The office project would be part of a trend of denser development in the South of Market area and in downtown San Francisco. Cumulative increases in the amount of office space would continue regional growth in service sector and office headquarter activities and employment. The office project would add to cumulative traffic increases south of Market Street and cumulative increases in passenger loadings on BART, Muni and other transit systems.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

The San Francisco City Planning Commission could approve an alternative if they thought the alternative more appropriate for the site in spite of the project sponsor's reasons for rejection.

A. ALTERNATIVE I: NO-PROJECT ALTERNATIVE

DESCRIPTION

This alternative would entail no change to the buildings as they now exist. The buildings could be used for industrial use. There would be no addition to the top of Building 3. The total gross square footage would be 383,000.

ENVIRONMENTAL IMPACTS

The impacts would be similar to what existed on the project site when it was occupied by the printing firm. There would be approximately 300-400 employees, which is less than the proposed office project but similar to the proposed trade mart. Transportation and air quality conditions would be similar to the trade mart (see Section IV.C. Transportation, page 65 and IV.D. Air Quality, page 89). The parking requirement would be 375 spaces, less than either of the proposed projects. Levels of noise, air pollution, energy consumption, wind and visual effects would remain the same as when the buildings were occupied by the printing firm. The no-project alternative would provide no additional employment, no increase in taxable revenues accruing to the City, and no increased cost to the City for supplying services beyond that time when the site was occupied by the printing firm.

REASONS FOR REJECTION

The project sponsor rejected this alternative because none of his objectives (see Section I.B., Objectives of Sponsor) would be met and the investment would be lost. This

alternative would not provide office or trade mart space to respond to existing demand in San Francisco. Although the buildings could be used for industrial use, the lease rates required by the project sponsor would be in excess of existing rates for industrial use in the South of Market Area. It is estimated that the rents would be 2½ times the existing rents charged for industrial space. In addition, the project sponsor thinks that the vertical circulation would have to be improved in order to make the buildings attractive for an industrial tenant. The cost of such improvements would further increase the lease rates. Given the financial infeasibility of this alternative, it is likely that the buildings would remain empty.

B. ALTERNATIVE 2: DESIGN REQUIRING NO SPECIAL AUTHORIZATION

DESCRIPTION

This alternative would be constructed in conformity with all basic San Francisco zoning requirements currently applicable to the project site. No special authorization or approvals from the City would be required. Design of the project would not involve moving the pedestrian bridge. Conditional Use authorization for exceptions to the bulk limit and a parking variance would not be sought. The number of parking spaces required by this alternative would be 620 spaces. Subtracting a 185-space credit for the previous uses results in a total of 435 required spaces. A total of 435 independently accessible parking spaces, would be located on-site in three levels created from the basement and first and second floors of Building 3.

The total gross square footage for this alternative would be 383,000 square feet, 60,000 square feet less than for the proposed project. The three-story addition would not be built. Mixed uses for this alternative are as follows:

Alternative 2

Office (sq. ft)	Computer (sq. ft)	Retail (sq. ft)	Accessory Storage (sq. ft)	Recreation (sq. ft)	Parking Provided
260,000	30,000	15,000	10,000	30,000	435 spaces

ENVIRONMENTAL IMPACTS

If the parking were increased at the expense of office space, there would be fewer employees, and this project would generate about 8,600 daily person-trips about 25% less than the proposed office project and about 50% more than the trade mart. Less office space would result in 10-15% less energy usage and less demand for community services. Air quality impacts would be slightly decreased due to the decrease in daily person trips.

According to the City Planning Commission's Office Housing Production Program (OHPP), the housing requirement for this alternative would be 169 units. This would be 65 units less than the proposed office project.

REASONS FOR REJECTION

The project sponsor cannot add more parking to the site than is currently proposed due to the structural configuration limitations of the existing structures. Buildings 1 and 4 are wooden structures. Problems associated with potential fire hazards, accessibility, column spacing, and inability to support the weight of multiple decks of parked cars would render these buildings unsuitable for parking. Building 2 is long and narrow; in addition to having limited access off of Sterling Street, the ramp system needed for several floors of parking would take up about 25% of the available area. The basement of Building 3 would be given over to parking for the proposed project, however, for this alternative (No Special Authorization), the possibility of adding more decks would entail major modification of the existing structure including ramp systems.

C. ALTERNATIVE 3: RETAIL USE

DESCRIPTION

This alternative would involve the adaptation of the existing buildings into specialized retail sales outlets open to the public.

The existing buildings would contain a variety of uses; however, the primary use would be retail. Retail operations could include sales of office equipment, furniture, electronics, clothing factory outlets, and the like.

Similar operations in other areas typically have 5,000 square feet (average) individual tenant areas which employ perhaps two salespersons with approximately four to six

shoppers per unit during weekday daytime use.[1] Heavy user loads occur on evenings and weekends at which time a typical space may contain 15 to 20 shoppers.

The total gross floor area would be 383,000 square feet, which is 60,000 square feet less than the proposed project. The two 3-story towers would not be included as part of this alternative and none of the impacts associated with construction would occur. As with the office or trade mart projects, 298 parking spaces would be provided.

Uses would be broken down as follows:

Alternative 3

Office	Accessory Retail	Retail	Storage	Recreation	Parking Provided
(sq. ft.)	(sq. ft.)	(sq. ft.)	(sq. ft.)	(sq. ft.)	
45,000	30,000	198,000	80,000	30,000	298 spaces

ENVIRONMENTAL IMPACTS

Total on-site employment would be about 830, which is about 60% of the proposed office project, but about 300 more than the trade mart. According to the City Planning Commission's Office Housing Production Program (OHPP), the housing demand for this alternative would be 40 units, less than both proposed projects. Projects with less than 50,000 square feet of office space are exempt from OHPP requirements. The reduction of office space/employees would generate fewer parking demands, but more daily person-trips and more peak-hour trips (Tables 23 and 24, pages 112 and 113). Air quality impacts would be slightly more than for the proposed project but would not be of a measurable quantity. The area's noise environment would not be changed and there would be no change in the on-site demand for community services.

Since most retail activity would occur over the weekends and in off-peak hours, off-street parking would be plentiful. Potential customers would not compete with commuters for space in lots. The retail center would attract mid-day shoppers from surrounding office buildings and it is expected that pedestrian activity would increase during the noon hour.

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[1] Don Davella, Plant Contractors, Inc., written communication, March 1, 1983.

TABLE 22

TRIP GENERATION OF POTENTIAL RETAIL ALTERNATIVE

Land Use (net square feet)		Daily Trip Rate	Daily Trips	P.M. Peak Hr. Percent	P.M. Peak Hr. Trips
- 45,000	gross sq. ft. office area	18.1/1000 sq. ft.[2]	815	10.5%	85
- 193,800	sq. ft. leasable retail area[1]	55/1000 sq. ft.[2]	10,660	9%	960
- 30,000	gross sq. ft. recreational area	50/1000 sq. ft.	1,500	8%	120
	TOTALS		12,975		1,165

- 815	daily office trips	x	40%	=	325	work trips	x	60%	=	90 non-work trips
- 10,660	daily retail trips	x	12%	=	1,280	work trips	x	88%	=	9,380 non-work trips
- 1,500	daily recreation trips	x	4%	=	60	work trips	x	96%	=	1,440 non-work trips
		TOTALS			1,665	work trips				10,910 non-work trips

[1] 228,000 sq. ft. gross retail area x 85% = 193,800 sq. ft. leasable retail area.

[2] Institute of Transportation Engineers, Trip Generation, Virginia, 1979. This rate reflects a retail area with many shops, resulting in linked trips between shops and a lower overall trip rate.

TABLE 23

PARKING DEMAND OF POTENTIAL RETAIL ALTERNATIVE

- 325 daily office work trips x 56% auto/1.2 persons per auto/2 one-way trips per auto = 75 long-term spaces
- 1,340 daily retail work trips x 74% auto/1.2 persons per auto/2 one-way trips per auto = 415 long-term spaces
- 10,910 daily non-work trips x 10% auto/1.2 persons per auto/2 one-way trips per auto/5.7 turnovers daily = 80 short-term spaces

TOTAL = 570 spaces

The allowable energy consumption for a retail alternative would be greater than for the proposed office project according to Title 24.

None of the impacts associated with construction of the proposed three-story addition would occur.

REASONS FOR REJECTION

The project sponsor believes that there would be a limited demand for a retail alternative of this size. Because there is little foot traffic in this area the location would not attract many drop-in customers. In addition, the building configuration would adapt poorly to retail uses due primarily to fragmented levels in the four buildings. For these reasons the project sponsor has rejected this alternative.

D. ALTERNATIVE 4: GROUND FLOOR INDUSTRIAL USE

DESCRIPTION

This alternative would call for industrial uses to occupy the ground floor of Buildings 1-2, 3 and 4. A total of 94,000 net usable square feet of floor area would be devoted to some type of industrial or manufacturing activity. Buildings 1-2 would contain 47,000 net usable square feet of ground floor industrial area; Building 3 would offer 29,000 net usable square feet on the ground floor; and Building 4 would contain 18,000 net usable square feet. The total gross floor area of this alternative would be 443,000 gross square feet, the

same as for the proposed project. The remainder of this alternative would be turned over to mart or office uses, 332,891 gross square feet. As with the proposed project, 298 parking spaces would be provided.

ENVIRONMENTAL IMPACTS

Total on-site employment would be 1,331 for the office space and 108 for the industrial space (at 16 employees per net acre)[1] for a total of 1,439, which is 54 less than the proposed office project but 999 more than the trade mart project.

According to the City Planning Commission's Office Housing Production Program (OHPP), the housing requirement for the industrial alternative (based on the office space) would be 295 units, more than the proposed office project.

The industrial alternative would generate fewer daily person trips than either the office project (10,250 daily trips) but more than the Trade Mart (4,205 daily trips).

270,150	net square feet office @ 18.1/1000 = 4,889 daily person trips
94,000	net square feet industrial/manufacturing @ 5.0/1,000[2] = 470 daily person trips
TOTAL	= 5,359 daily person trips

The Planning Code parking requirement for this alternative would be 602, less than the proposed office project (694) but more than the trade mart project (386).[3] Parking demand would be similar to the proposed office project and demand would exceed the supply of off-street spaces.

REASONS FOR REJECTION

Although the industrial space would be located on the ground floor of existing buildings, the placement of walls, columns, life safety systems and elevator banks would present an inefficient division of space. Conflicts would arise between the needs of the office workforce to reach the top floors and the needs of industrial tenants to maintain direct

access and unencumbered movement of goods. The project sponsor thinks that the obstacles to free circulation would not be acceptable to either office or industrial tenants.

Loading docks would have to be shared with the offices located on the upper floors. Conflicts between uses and competition for facilities would lead to trucks parking on the street which could cause interference with traffic flows. As ample truck docking facilities are necessary to expedite the transfer and movement of industrial goods, the project sponsor does not think that the current layout and distribution of loading space would be acceptable to industrial tenants.

In addition to the spatial problems associated with the buildings, the project sponsor believes that the office rents would have to be raised in order to make the industrial space affordable. Industrial space (ground floor) in the project area currently rents from $.20 - $.40 per square foot.[4] If the project sponsor were to offer the industrial space at $.30 per square foot, the rent on the office space would have to be increased to subsidize the cost of the industrial space. The project sponsor must offer the office space at an average rent of $2.00 per square foot in order to cover the costs of seismic improvements, life-safety features, air ventilation and mechanical systems, special security, vertical transportation system, etc. as necessary for offices, or mart use. This is a maximum rent level, in the project sponsor's opinion, to attract secondary business development, "incubator" tenants, or the type of tenant envisioned for the trade mart.

In order to provide industrial space, the balance of office space must be offered at a higher rent (i.e. a minimum of $2.60 per square foot).[5] This would discourage the marketability of the office or mart space and eliminate the possibility of a feasible project. Therefore, the project sponsor has rejected this alternative.

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[1]Environmental Impact Planning Corporation, Fountaingrove Ranch Final EIR, certified June 15, 1981, page 105.

[2]Institute of Transportation Engineers, Trip Generation, Virginia, 1979.

[3]The parking requirement of the Planning Code has been calculated as follows:

270,150	s.f. net office area @ 1/500 s.f.	= 540
94,000	s.f. net industrial area @ 1/1,500 s.f.	= 62
	Total	602

[4]Bruce Breitman, President, Breitman Company, telephone conversation, June 7, 1983.

[5]The project sponsor would lose $1.70 per square foot ($2.00 required for the rent per square foot) for industrial space (approximately 94,000 square feet) for a total loss of $159,800 ($94,000 x $1.70). Recovering this loss would add $0.60 to the office rents ($159,000 divided by 270,000 square feet of office = $0.60 per square foot).

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San Francisco, CA 94114

GROUPS AND INDIVIDUALS (Cont.)

Steven Weicker
899 Pine Street, #1610
San Francisco, CA 94108

Marie Zeller
Whisler-Patri
590 Folsom Street
San Francisco, CA 94105

Ellen Byrne
c/o Mills Carneghi
235 Montgomery St., Suite 1264
San Francisco, CA 94104

Eugene Coleman
Canon Kip Committee House
705 Natoma
San Francisco, CA 94103

Walter Knox, Chairman
Central City Council
P.O. Box 6149
San Francisco, CA 94101

Jim Firth
577 Arkansas
San Francisco, CA 94107

South of Market Association
E.O.C. Office
1173 Mission Street
San Francisco, CA 94103

SPUR
414 Clement St., 2nd. Floor
San Francisco, CA 94118

Marie Vermiglio
951 Rhode Island
San Francisco, CA 94107

James Reed
Charter Commerical Brokerage
875 Battery Street
San Francisco, CA 94111

Kent Soule
Chickering & Gregory
3 Embarcadero Center, 23rd Floor
San Francisco, CA 94111

ADJACENT PROPERTY OWNERS

American Licorice Co.
55 Federal Street
San Francisco, CA 94107

Bumper Development Corp.
c/o Emerald Fund
2850 Webster Street
San Francisco, CA 94123

Phyllis K. Friedman
c/o Wells Fargo-Tr#308-105418
P.O. Box 44002
San Francisco, CA 94114

James S. Kung & Su Mei
860 43rd Avenue
San Francisco, CA 94121

Marguerite A. Lorton
50 California St., Suite 2260
San Francisco, CA 94111

Kamel Ayoub & R. Majda
512 Second Street
San Francisco, CA 94107

L. Myers Co.
658 Howard Street
San Francisco, CA 94105

Niantic Corp.
785 Market Street
San Francisco, CA 94102

Eric L. Pedley Co., Inc.
1091 Atlas Peak Road
Napa, CA 94558

ADJACENT PROPERTY OWNERS (Cont.)

Rincon Associates
c/o Fisher-Friedman
242 California Street
San Francisco, CA 94111

Trade Engraving Co.
500 Second Street
San Francisco, CA 94107

U.S. Enterprise Co.
495 De Haro Street
San Francisco, CA 94107

Paul Hughes
Caltrans
P.O. Box 7791
San Francisco, CA 94120

APPENDIX A

FINAL INITIAL STUDY*

SECOND STREET SQUARE

82.591E

*Differences among data presented in the following Initial Study and the preceding EIR are attributable to the availability of additional and more precise data during the subsequent preparation of the EIR. An analysis of the project's compatibility with the Master Plan has been included in the EIR where appropriate.

APPENDIX A

DEPARTMENT OF CITY PLANNING 450 McAllister St. - 5th Floor
(415)558-5260

NOTICE THAT AN
ENVIRONMENTAL IMPACT REPORT
IS DETERMINED TO BE REQUIRED

Date of this Notice: February 25, 1983

Lead Agency: City and County of San Francisco, Department of City Planning
450 McAllister St. - 5th Floor, San Francisco CA 94102

Agency Contact Person: Jim McCormick Tel: (415) 558-5260

Project Title: Second Street Square
82.591E

Project Sponsor: South Beach Development Co.

Project Contact Person: Ron Kaufman

Project Address: 461, 501 Second St., 355, 380 Bryant St., 40 Sterling St.

Assessor's Block(s) and Lot(s): AB 3764, Lot 70; AB 3774, Lots 54, 55

City and County: San Francisco

Project Description: Conversion of four vacant buildings from manufacturing uses to office space; addition of 60,000 gross sq.ft. of new construction in the form of two three-story towers for a total of 443,000 gross sq.ft. of space including 393,000 gross sq.ft. of office; 20,000 gross sq.ft. of retail space; 30,000 gross sq.ft. of sports/recreation space; 325 parking spaces; requiring Discretionary Review, Conditional Use authorization and Master Plan Referral Action.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15081 (Determining Significant Effect), 15082 (Mandatory Findings of Significance) and 15084 (Decision to Prepare an EIR), and the following reasons, as documented in the Initial Evaluation (initial study) for the project, which is on file at the Department of City Planning:

SEE ATTACHED INITIAL STUDY

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: March 7, 1983.

An appeal requires 1) a letter specifying the grounds for the appeal, and 2) a $35.00 filing fee.

Alec S. Bash, Environmental Review Officer

FINAL

INITIAL STUDY

SECOND STREET SQUARE

82.591E

February 25, 1983

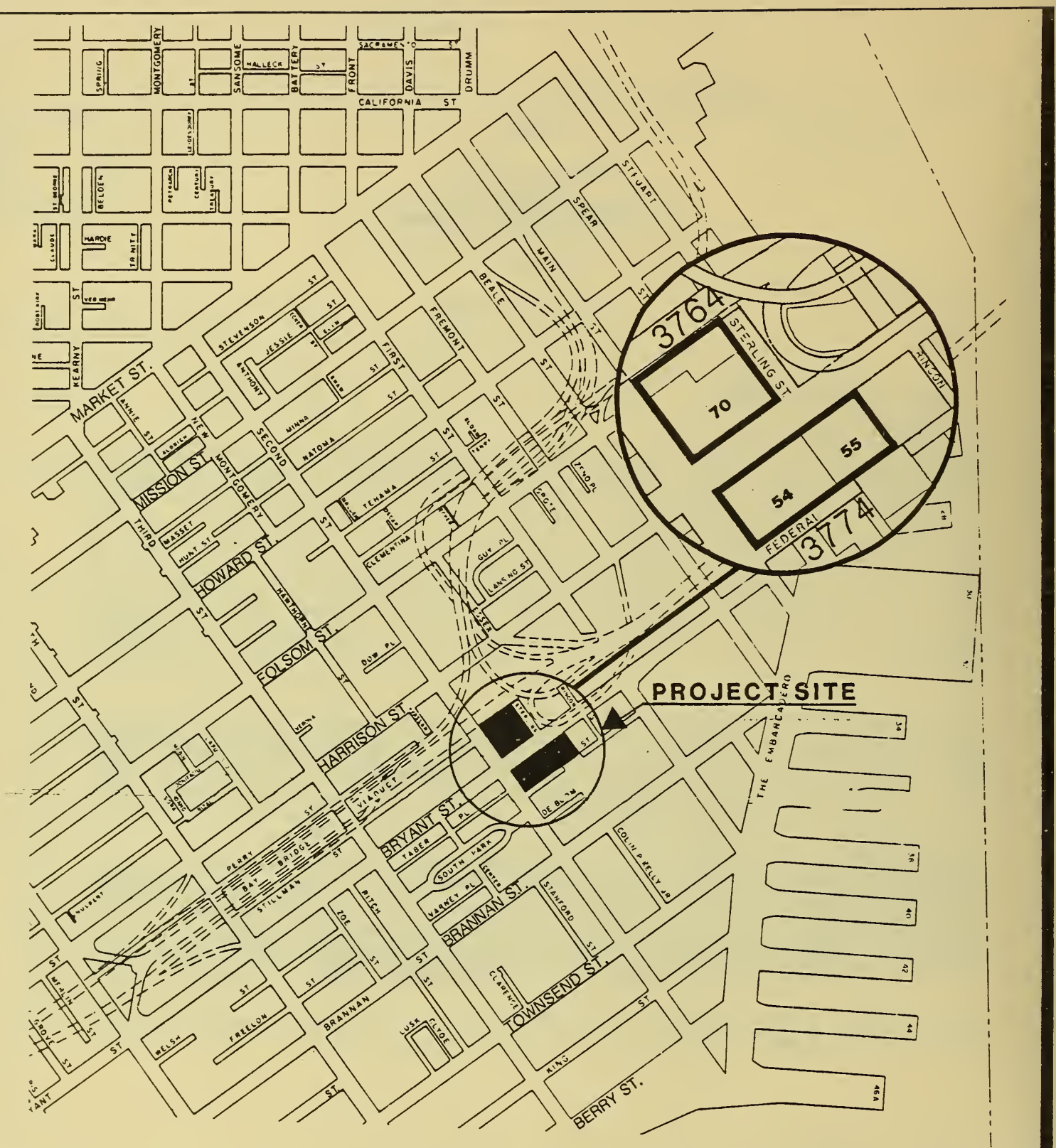
I. PROJECT DESCRIPTION

Second Street Square consists of a proposal by the South Beach Development Company, a joint venture of Ron Kaufman Companies and General Atlantic Holding Company, to convert four existing buildings at Second and Bryant Streets from currently vacant manufacturing space to office uses. The existing buildings were previously occupied by the printing firm Stecher-Traung-Schmidt, which moved to a more modern facility in Fremont. The site, located in San Francisco, occupies the northeast and southeast corners of the intersection of Second and Bryant Streets, Assessor's Blocks 3764 and 3774, Lot 70 and Lots 54 and 55, respectively (Figure 1, page 2). Elevated freeway ramps run along the northern side of Buildings 1 and 2; the Sterling Street on-ramp curves around the east side of Buildings 1 and 2; and Bryant Street runs between buildings 1-2 and 3-4 (Figure 2, page 3).

The site covers 118,567 gross square feet. In addition to converting 383,000 gross square feet of vacant space, the project sponsor also intends to add about 60,000 gross square feet on top of Building 3 (Figure 3, page 4). 393,000 square feet would be used for office, 20,000 square feet for retail and about 30,000 square feet for recreational/sports/exercise use for a total of 443,000 gross square feet.

New construction would consist of adding two 3-story towers on top of Building 3, bringing it up to a height of 105 feet, or seven stories. The water tower which currently sits on the top of Building 3 would be removed. The clocktower, part of Building 1, would remain, thus preserving a local historical feature. The project sponsor proposes to move the pedestrian overpass about 60 feet west, toward Second Street. As part of the project, between 325 and 375 parking spaces would be provided on-site and in nearby lots.

The contractor is Plant Contractors, Inc. and the structural engineer is Peter Culley and Associates, both of San Francisco.


3764
70
55
54
3774
FEDERAL
STERLING ST
PROJECT SITE
MARKET ST.
MISSION ST.
HOWARD ST.
FOLSOM ST.
HARRISON ST.
BRYANT ST.
BRANNAN ST.
TOWNSEND ST.
BERRY ST.
CALIFORNIA ST
THE EMBARCADERO
COLEMAN KELLY JR
STEVENSON
JESSIE
MINNA
NATOMA
TEHAMA
CLEMENTINA
GUY PL
LANSING ST
DOW PL
PERRY
BAY
STILLMAN
SOUTH PARK
VARNEY PL
STANFORD
CLARENCE
ZOE
FREELON
WELSH
LUSK
CLYDE
KING
SPEAR
STUART
MAIN
BEALE
FREMONT
FIRST
SECOND
THIRD
KEARNY
MONTGOMERY
SANSOME
BATTERY
FRONT
DAVIS
DRUMM
SPRING
HALLECK
BELDEN
MASSET
HUNT ST
ANNIE ST
ELLIS
EDDY
TURK
GROVE
HAYES
FULTON
OAK
FELL
MCALLISTER
JESSIE
ANTHONY
ELIM
ERIE
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HOOPER
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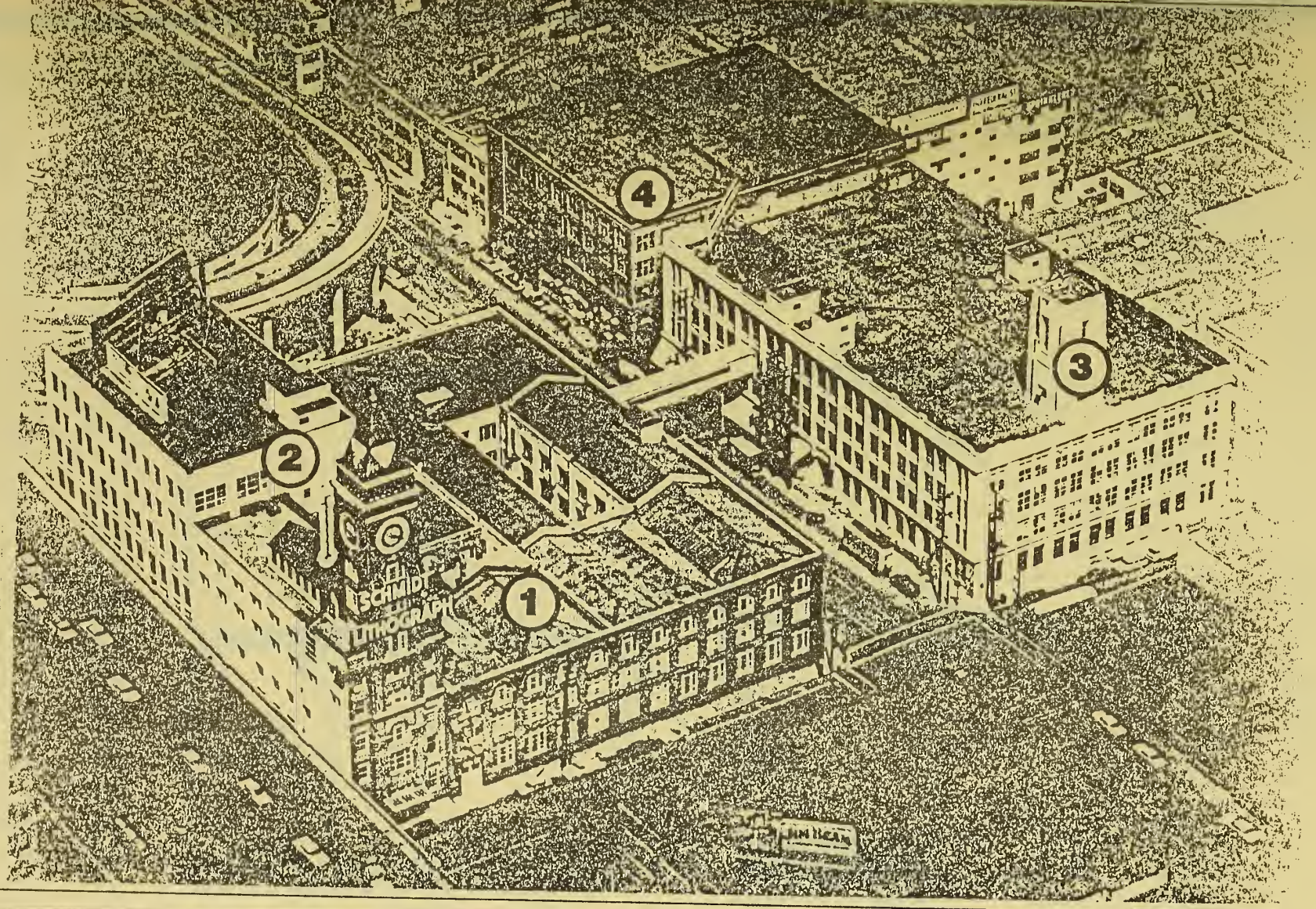
TENDERLOIN

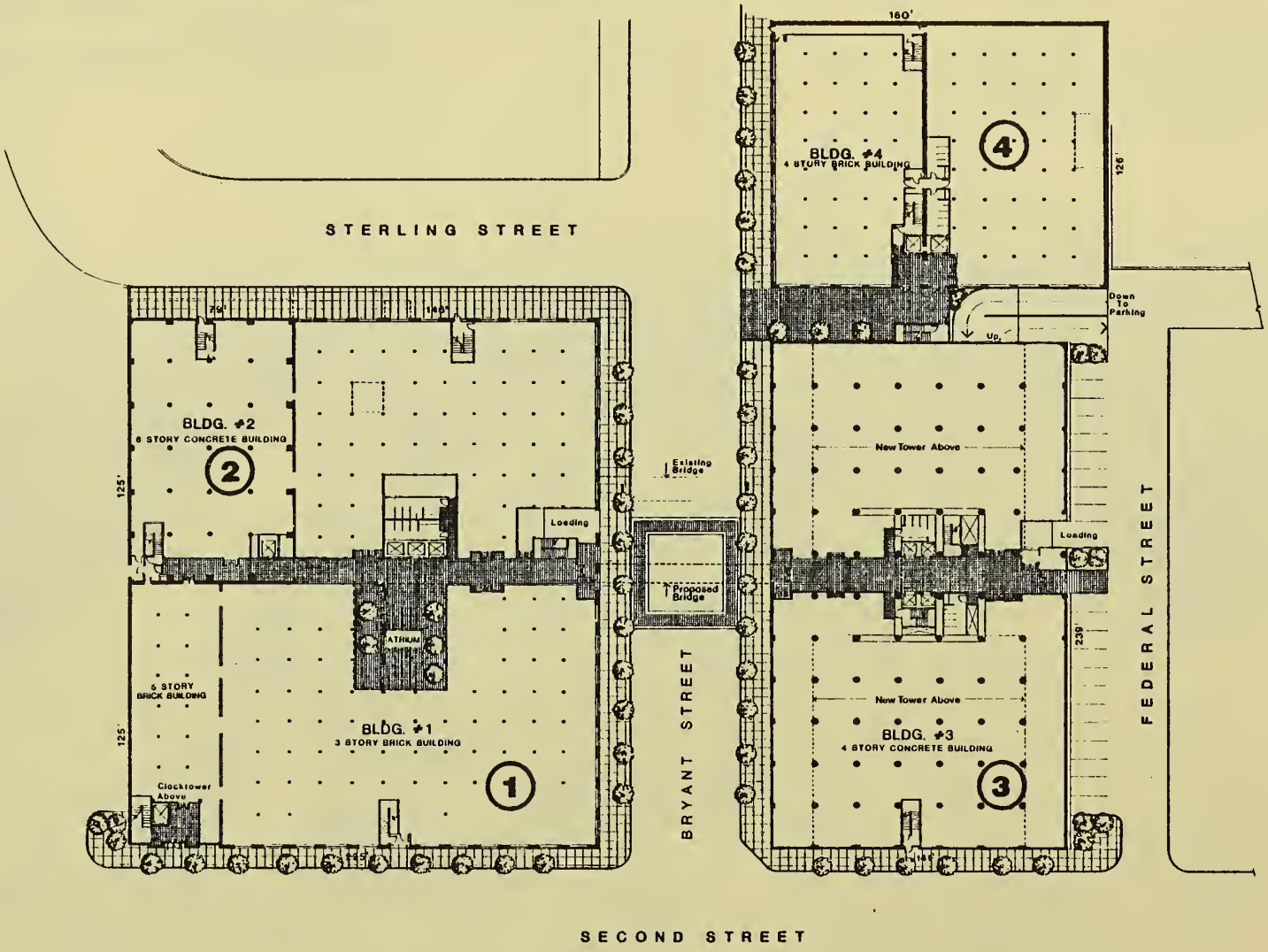


③ EXISTING BUILDINGS

Second Street Square

PROJECT PHOTOGRAPH

2



SCALE 0 20 40 80 FEET

Second Street Square

FIRST FLOOR PLAN

3

II. SUMMARY OF POTENTIAL ENVIRONMENTAL EFFECTS

A. POTENTIALLY SIGNIFICANT EFFECTS

The potentially significant environmental effects identified in this Initial Study include land use, transportation and housing. The cumulative environmental effects of increased traffic, demand for parking and transit services, increased housing demand and potential air quality impacts would also be potentially significant.

These potential effects will be analyzed in greater detail in a subsequent Environmental Impact Report.

B. INSIGNIFICANT EFFECTS

Effects determined not to be significant are listed below. These topics require no further investigation and will not be discussed in the EIR.

General Plan Compatibility. The proposed project would respond to Objective 1, Policy 1 of the Commerce and Industry Element of the San Francisco Comprehensive Plan by providing economic benefits and minimizing undesirable consequences. The project would also comply with City Pattern Policy 8 and Conservation Policies 4 and 5 of the Urban Design Plan.

Visual Quality and Urban Design. Project construction would be primarily within the four existing buildings. Exterior construction will be limited to the replacement of a small water tower on Building 3 by a three-story, 60,000 square foot addition and relocation of the existing pedestrian overpass.

Noise. Construction noise would not create an adverse environmental effect because the project would be primarily a renovation rather than construction of a new building. The exterior noise environment which varies between 75-87 dBA would be mitigated by sound insulation measures to achieve acceptable indoor noise levels.

Air Quality/Climate. Project operation would not (1) violate any ambient air quality standard; (2) expose any sensitive receptors to air pollutants; (3) create objectionable odors; (4) result in the burning of any materials; or (5) alter any local wind, moisture or temperature regime, nor would it cast shadows on any public open spaces.

Utilities/Public Services. The demand for public services generated by the proosed project could be met by existing facilities and would not require additional personnel or equipment.

Biology. The project would not affect the existence or habitat of any rare, endangered or unique species nor would it require removal of mature scenic trees. The only vegetation on the site are the street trees recently planted.

Geology/Topography. The proposed project would not expose people or structures to major geologic hazards. There would be no change of site topography. There are no unique geologic features on the site.

Water. Project construction would not (1) reduce the surface water quality; (2) change the surface runoff or drainage pattern; or (3) change the quality of the public water supply.

Energy/Natural Resources. The project would not substantially increase the demand on existing energy sources or affect the potential use, extraction, conservation or depletion of a natural resource.

Hazards. The project would not increase the risk of explosion or release of hazardous substances, create or expose people to a potential health hazard or interfere with an emergency response plan. The project sponsor has agreed to the mitigation measure on page 25 to provide a building evacuation plan which would be reviewed by the Mayor's Office of Emergency Services.

Cultural. Project construction would not affect a known archaeological resource or cause a physical change affecting unique ethnic or cultural values.

III. ENVIRONMENTAL SETTING

A. COMPATIBILITY WITH EXISTING ZONING AND PLANS. Could the project:

	Yes	No	Discussed
1. Require a variance, special authorization, or change to the City Planning Code or Zoning Map?	X		X
2. Conflict with the Comprehensive Plan of the City and County of San Francisco?		X	X
3. Conflict with any other adopted environmental plans and goals of the City or Region?		X	X

The project sponsor intends to apply for a special authorization related to the number of parking spaces to be provided with this project and a Conditional Use authorization for exception to the bulk limit of the addition. These issues will be addressed in the EIR.

The relocation of the pedestrian bridge would require approval by the Department of Public Works with advisory information supplied by the Real Estate Department. The Board of Supervisors and the Mayor would have final approval authority following Master Plan referral action by the City Planning Commission.

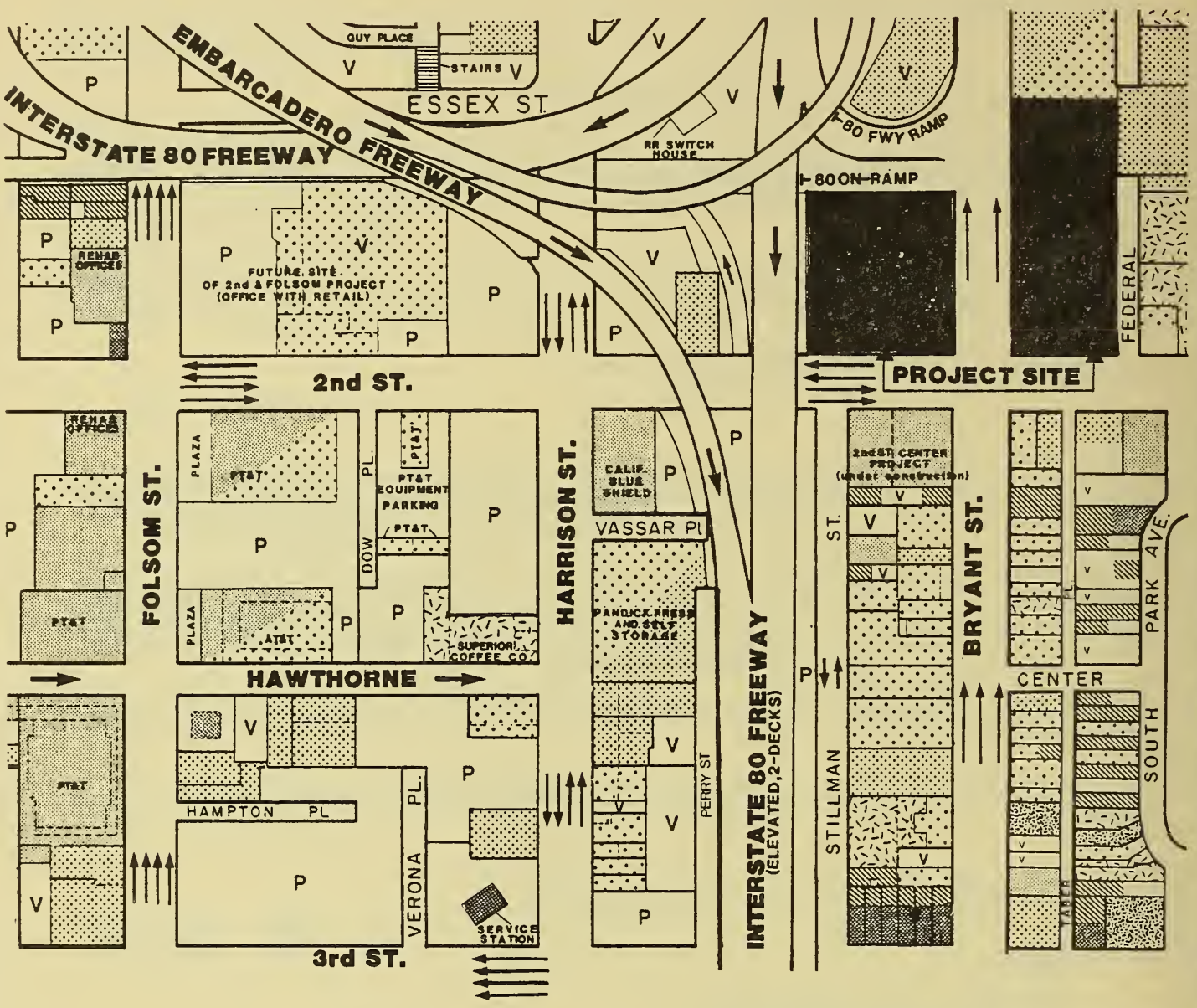
The project would generally respond to the City Comprehensive Plan and this issue will be addressed in the EIR.

The project would not conflict with adopted environmental plans and goals of the City and region.

B. ENVIRONMENTAL EFFECTS. Could the project:

	Yes	No	Discussed
1. Land Use.			
a. Disrupt or divide the physical arrangement of an established community?		X	X
b. Have any substantial impact upon the existing character of the vicinity?	X		X

The project site is located South of Market in the M-1 (light industry) zoning district and a 105-foot height and bulk district. This rapidly changing area is characterized by many vacant warehouses, small industries, existing offices, proposed office projects, wholesale businesses, parking lots and various services (See Figure 4, page 8). Within a one-block radius of the site buildings vary from one to six stories (See Figure 5, page 9).



SOURCE: EIP

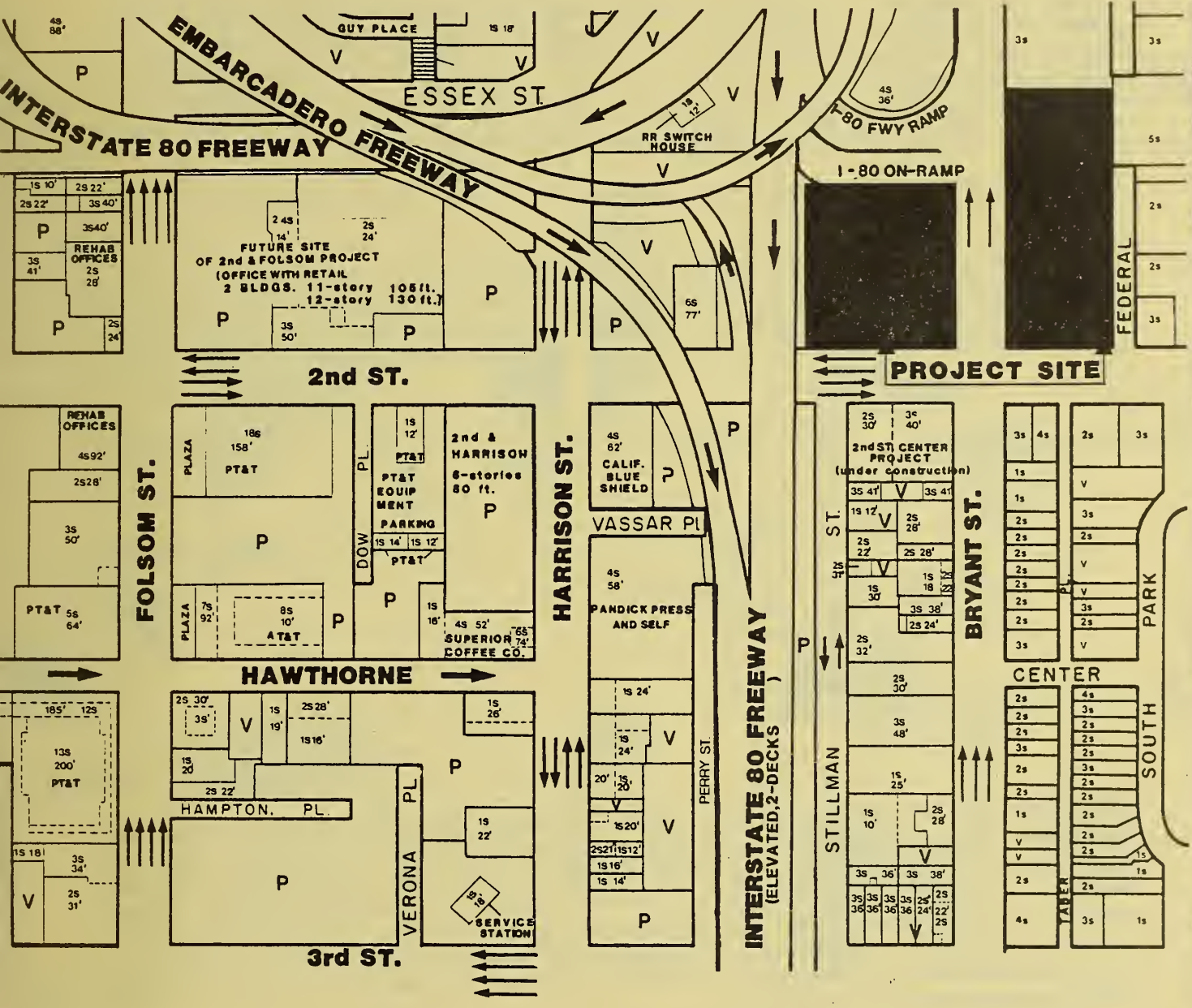
OFFICE
WHOLESALE/ STORAGE
RETAIL
HOME AND BUSINESS SERVICES
AUTOMOTIVE
RESIDENTIAL
LIGHT MANUFACTURING
P PARKING LOT
V VACANT

SCALE 0 200 400 FEET

Second Street Square

EXISTING LAND USE

4



3s 38' NUMBERS INDICATE BUILDING HEIGHTS IN STORIES AND FEET.

P PARKING

V VACANT

SCALE 0 200 400 FEET

SOURCE: EIP

Second Street Square

BUILDING HEIGHTS IN PROJECT VICINITY

5

Major new projects in the vicinity include the Second Street Center Project (under construction), Second and Harrison (under formal review), and Marathon/Second and Folsom (approved) (see Figure 6, page 11). There are over 20 conversion projects in the area that already exist, are approved, are under construction, or are still under formal review. A few of these are: 325, 333 and 359 Bryant, 615, 625, 282 and 400 Second Street, 101-109, 111 and 123 Townsend, and 601 and 625 Third Street.

There are two extensive development plans in the vicinity: Rincon Hill Plan and Rincon Point - South Beach Redevelopment Plan.

These matters will be discussed further in the EIR, particularly as they affect cumulative land use compatibility. To assess the impacts of converting the uses at the project site from printing to office/commercial, this section of the EIR will also describe trends in the City's industrial sectors, particularly in the area surrounding the project site.

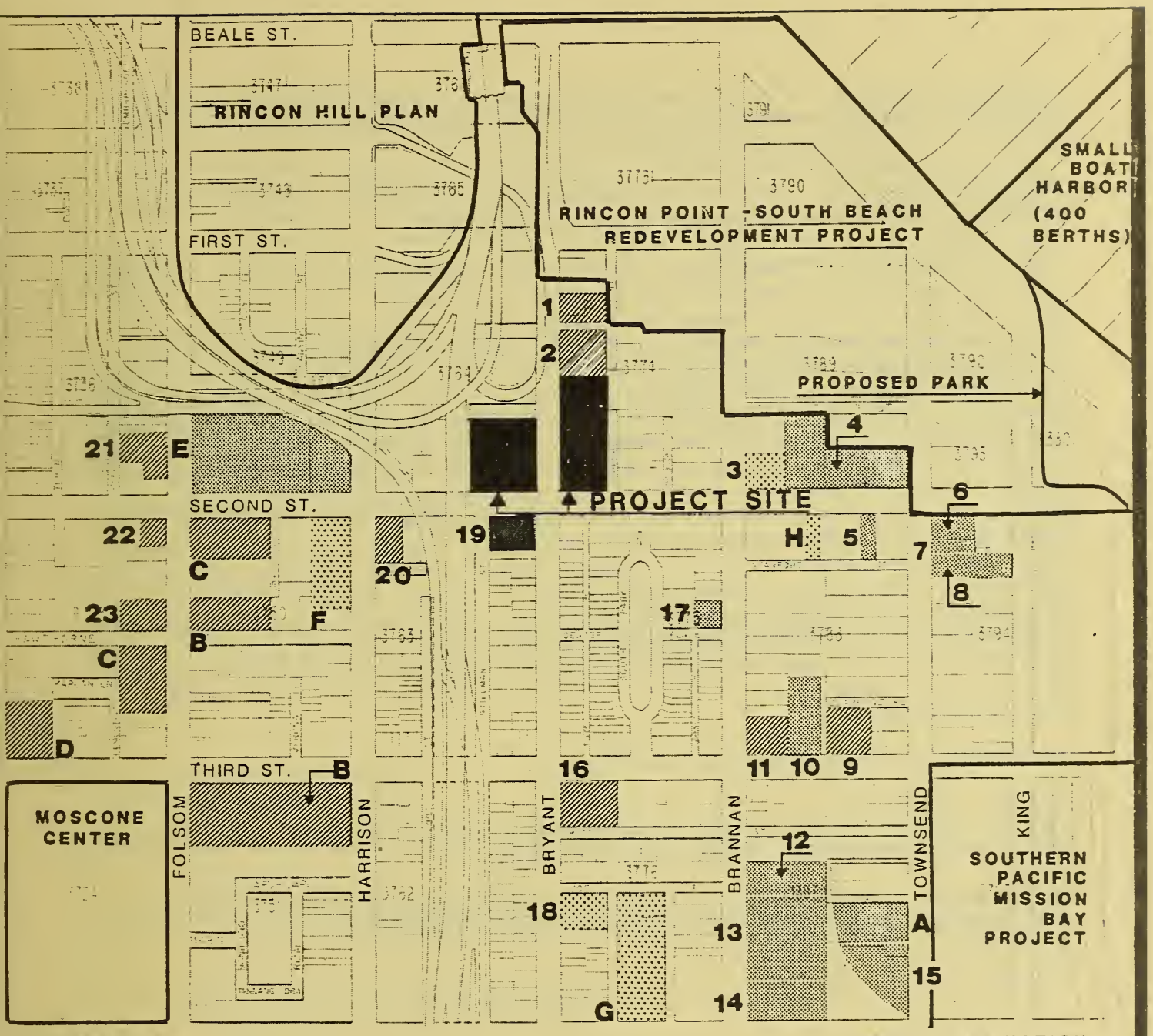
	Yes	No	Discussed
2. Visual Quality. Could the project:			
a. Have a substantial, demonstrable negative aesthetic effect?	___	X	X
b. Substantially degrade or obstruct any scenic view or vista now observed from public areas?	___	X	X
c. Generate obtrusive light or glare substantially impacting other properties?	___	X	X

The project site is located in a predominantly industrial area where older structures are currently being rehabilitated for adaptive reuse and new office buildings are proposed. The project's two buildings are well known architectural features in the South of Market area. The buildings frame and define the east side of the Second and Bryant Street intersection connecting to the Sterling Street on-ramp to the Bay Bridge. Thousands of travelers pass through this portal each day as they leave the City for other destinations. The visual impression of the project area is, therefore, considerably influenced by the physical appearance of the buildings.

Architectural details of spandrels,[1] sills and vertical portions of the exterior building faces define window areas and serve to visually break up and reduce the mass and bulk of the structures, maintaining the pedestrian scale. The ornamental clock tower on top of the north structure is a distinguishing feature of the building that gives a strong sense of identity to the project.

The project would comply with several policies of the Urban Design Plan,[2] an element of the San Francisco Master Plan.

City Pattern Policy 8: "Increase the visibility of major destination areas and other points for orientation."[3]



CONVERSIONS

1. 325 BRYANT
2. 333 BRYANT
3. 615 2nd/BRANNAN
4. 2nd/BRANNAN
5. 690 2nd
6. 101-109 TOWNSEND
7. 111 TOWNSEND
8. 123 TOWNSEND
9. 665 3rd/MJB
10. 625 3RD
11. 601 3rd/WELLS FARGO BANK
12. 435 BRANNAN
13. 475 BRANNAN
14. 601 4th
15. 290 TOWNSEND
16. 3rd/BRYANT
17. 338-340 BRANNAN
18. 539 BRYANT
19. 2nd STREET CENTER
20. 400 2nd/BLUE SHIELD
21. 590 FOLSOM
22. 282 2nd
23. 95 HAWTHORNE

NEW CONSTRUCTION

- **A.** 252 TOWNSEND
- **B.** ATT OFFICE COMPLEX
- **C.** PTT OFFICE COMPLEX
- **D.** GIFT MART
- **E.** MARATHON/2nd AND FOLSOM
- **F.** 2nd AND HARRISON
- **G.** WELSH COMMONS
- **H.** 640 2nd

PROJECT UNDER FORMAL REVIEW
PROJECT APPROVED
PROJECT UNDER CONSTRUCTION
COMPLETED PROJECTS

SOURCE: EIP

SCALE 0 500 1000 FEET

Second Street Square

PROJECT ACTIVITY IN THE VICINITY

6

Conservation Policy 4: "Preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development.[3]

Conservation Policy 5: "Use care in remodeling of older buildings, in order to enhance rather than weaken the original character of such buildings."[3]

A preliminary review of the project site and project proposal indicates that visual and design issues related to the project would not adversely impact the project area. To date, repainting the buildings in predominantly light beige color tones has improved the appearance of the project. The planting of street trees along Second, Bryant and Federal Streets has enhanced the pedestrian sidewalk and street environment. Repainting and providing street trees has also increased the visibility of the project at a major Bay Bridge access point, conforming to City Pattern Policy 8. Proposed project modifications would include relocating the Bryant Street pedestrian overpass 60 feet to the west for more efficient internal building circulation, removing the water tank from the top if the south building (Building 3), and adding two three-story office structures to the top of the south building. The three-story additions would be set back 20 feet from the building faces, except for the side of the building facing Second Street. The project would, for the most part, retain in an unaltered state, the geometry and detailing of the buildings' exterior architecture, conforming to Conservation Policy 5. The three-story addition would incrementally add to shadows cast in the project area, which would be reduced because of the 20-foot setbacks from the edge of the existing roofline. From a visual and design standpoint, the project preserves and refurbishes two structures that architecturally stand out among other industrial and warehouse structures in the project area, conforming to Conservation Policy 4.

Visual Quality will not be discussed in the EIR.

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[1]Spandrel: In a multi-story buildng, a panel-like area between the top of a window on one level and the sill (base) of a window in the story above.

[2]San Francisco Department of City Planning, Urban Design Plan, adopted by Resolution 6745 of the San Francisco City Planning Commission, August 26, 1981.

[3]Ibid, pages 13, 25.

	Yes	No	Discussed
3. Population. Could the project:			
a. Induce substantial growth or concentration of population?	X		X
b. Displace a large number of people (involving either housing or employment)?		X	X
c. Create a substantial demand for additional housing in San Francisco, or substantially reduce the housing supply?	X		X

a. The printing firm which previously occupied the four buildings had a peak employment of 625 jobs. New employment generated by the project could vary depending upon the uses of the buildings. The space would probably not be conducive to either the predominant continuous processing form of industrial production or the needs of smaller printing firms in the City. If typical office uses predominate, employment in the project could reach 1,772 (443,000÷ 250). Alternatively, if office support uses occupy the project, employment may be somewhat less. Employment, both direct and indirect, will be discussed in the EIR.

b. The buildings occupying the project site have recently become vacant but housed a printing firm for many years. This firm, Stecher-Traung-Schmidt, moved from San Francisco in order to obtain a large single-story facility which is more conducive to continuous production process than the buildings located at the project site.[1] The move was not related to plans for the current project, or to upward pressure on the cost of space due to other more intensive development in the vicinity.

c. Housing issues will be discussed in the EIR.

---

[1]Frank Vehey, Assistant Secretary, Stecher-Traung-Schmidt, telephone conversation, November 5, 1982.

	Yes	No	Discussed
4. Transportation/Circulation. Could the project:			
a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system?	X		X
b. Interfere with existing transportation systems, causing substantial alterations to circulation patterns or major traffic hazards?		X	X
c. Cause a substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity?		X	X
d. Cause a substantial increase in parking demand which cannot be accommodated by existing parking facilities?		X	X

The project would cause an increase in traffic and would add incrementally to the cumulative demand for parking and transit. These matters will be addressed in detail in the EIR.

	Yes	No	Discussed
5. Noise. Could the project:			
a. Increase substantially the ambient noise levels for adjoining areas?	___	X	X
b. Violate Title 25 Noise Insulation Standards, if applicable?	___	X	X
c. Be substantially impacted by existing noise levels?	X	___	X

Construction noise would not significantly impact the surrounding area for two reasons. First, the noisy exterior environment would help mask the noise of construction; second, most of the work would be renovation of the interior of existing buildings and the outer walls would act as a noise barrier. Although some noise would be heard by pedestrians and occupants of nearby buildings, it is not expected that the increase in overall noise levels in the area would be likely to cause annoyance or distraction of these individuals.

On-site noise generated by project operation would be minor, due largely to the operation of mechanical equipment which is amenable to sound insulation. Project-generated traffic would contribute to exterior noise levels, but the increase would likely be below the threshold of audibility. This is because an increase of less than 3 dBA, corresponding roughly to a doubling in traffic volumes, is required before most people notice any change. Since traffic volumes in the vicinity are already quite high, it is unlikely that the project would add enough traffic to produce a 3 dBA increase in noise.

A detailed noise report has been prepared by Warren Blazier Associates, Inc., and is on file with the Office of Environmental Reivew, 450 McAllister Street, 5th floor. The report presents measurements taken at the site which indicate that exterior noise varies between 75-87 dBA depending upon the location. These levels are quite loud and in the range designated by the Environmental Protection Element of the Comprehensive Plan requiring noise insulation features in the project design.[1]

The Blazier report presents the design criteria for interior noise levels (Table 1, page 15) which will be applied to the proposed project. The project sponsor would incorporate sufficient noise mitigations into the project design to meet or exceed these standards. This would result in indoor ambient noise levels which are considered acceptable in the Comprehensive Plan[1] for office development. The noise mitigation measures to be applied are reported in the Blazier report. They include special window designs varying from single-pane, double-strength windows which reduce noise 26-27 dBA to composite assembly (glass block plus double strength plate glass with a 4"-5" air space) windows which reduce noise 49-52 dBA, depending upon the location of the window. For certain areas mid- and high-frequency noise "infills"[2] will be used to help mask annoying low-frequency sounds.

TABLE I

BACKGROUND NOISE CRITERIA

	Space Use	Design Range	Marginal Acceptability
1.	Private Offices and Conference Rooms	NC 30-35 35-40 dBA	NC 40 45 dBA
2.	General Offices and Open-Plan Spaces	NC 35-40 40-45 dBA	NC 45 50 dBA
3.	Computer and Business Machine Areas	NC 40-45 45-50 dBA	NC 50 55 dBA
4.	Public Circulation, Lobbies, etc.	NC 40-45 45-50 dBA	NC 50 55 dBA

Construction and operational noise are covered by the San Francisco noise ordinances. The San Francisco Noise Ordinance (Section 2907b) limits noise emissions from any powered construction equipment except impact tools to 80 dBA at a distance of 100 feet.[3] All powered construction equipment would be required to comply with this regulation. Section 2908 of the Noise Ordinance does not permit construction work at night between 8:00 p.m. and 7:00 a.m., if noise from such work exceeds the ambient noise level by 5 dBA at the property line, unless a special permit is granted by the San Francisco Department of Public Works. Once the project is in operation, Section 2909 "Fixed Source Noise Levels" (San Francisco Municipal Code, Part II, Chapter VIII, Section 1, Article 29, 1972) limits noise generated by fixed sources such as mechanical equipment associated with the project. This noise shall not exceed 70 dBA at the property line of the affected property. Adverse noise levels would be mitigated as part of the project. Title 25 noise standards would not apply. No further discussion is warranted in the EIR.

[1] Department of City Planning, Environmental Protection Element of the Comprehensive Plan, September 1974, pages 19 and 17.

[2] "Infill" refers to a mitigation measure which uses neutral sounds to mask the effects of more objectionable sounds.

[3] Decibel (dB) is a logarithmic unit of sound energy intensity. Sound waves, traveling outward from a source, exert sound pressure levels measured in decibels. dBA are decibels corrected for the variation in frequency response of the typical human ear at commonly encountered noise levels.

6. Air Quality/Climate. Could the project:	Yes	No	Discussed
a. Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation?	___	X	X
b. Expose sensitive receptors to substantial pollutant concentrations?	___	X	X
c. Permeate its vicinity with objectionable odors?	___	X	X
d. Alter wind, moisture or temperature (including sun shading effects) so as to substantially affect public areas, or change the climate either in the community or region?	___	X	X

Although no violations of the carbon monoxide standards were recorded at the San Francisco monitoring station in 1981, air quality modeling performed for this area for previous EIRs indicates that violations of the 8-hour average (CO) air quality standard currently occur at Third and Bryant under worst-case meteorological conditions. It is expected that the proposed project would slightly increase carbon monoxide concentrations at intersections in the project vicinity. It is not expected that the increase would be large enough to measure. Similarly, CO concentrations at sensitive receptors would not be significantly affected. Ongoing state and federal regulations limiting emissions from motor vehicles are expected to eliminate this violation within the next few years. The proposed project would slow this improvement slightly. The proposed project may affect downwind ozone concentrations by increasing emissions of hydrocarbons and oxides of nitrogen; however, the resulting increase in ozone concentrations would not be large enough to measure. In combination with other planned and proposed development in the Downtown area, a measurable ozone impact could occur. This issue will be discussed in the EIR.

The project is not expected to have an adverse impact on wind (except for minor accelerations at rooftop level), temperature or moisture in the project vicinity.

Because the proposed project would be largely office uses, it is anticipated that on-site generation of odors and hydrocarbons which occur due to the use of chemicals in printing operations would be significantly reduced. This would result in an improvement in the indoor air quality of the project and the outdoor air quality in the project vicinity with respect to odors. It should be noted, however, that since the printing operations have moved to another part of the Bay Area, on a regional level, these impacts have been displaced, but not eliminated. The new printing facilities, however, have less square footage and improved working conditions including safe ventilation of noxious fumes and odors.

7. Utilities/Public Services. Could the project:	Yes	No	Discussed
a. Breach published national, state or local standards relating to solid waste or litter control?	___	X	X
b. Extend a sewer trunk line with capacity to serve new development?	___	X	X
c. Substantially increase demand for schools, recreation or other public facilities?	___	X	___
d. Require major expansion of power, water, or communications facilities?	___	X	X

Approximately 1.8 tons of solid waste would be generated each work day at the project site.[1] Golden Gate Disposal Company would have no difficulty in providing service to the site.[1] The project sponsor would provide a roll-off compactor for garbage removal. Solid waste would eventually be disposed of at a landfill site in Altamont, California.

Approximately 40 to 60% of San Francisco's commercial waste is high grade recyclable paper. Approximately 20 local waste paper recyclers contract to office buildings to buy used high-grade printing and writing paper, computer cards and printouts. White bond paper sells for about $90 per ton and computer cards sell for as much as $220 per ton. The project sponsor would encourage tenants to recycle these office waste products.

Assuming that the project would contain 354,400 square feet of usable space, (80% of the gross sq. ft.), estimated water consumption would be 44,300 gallons per day. Approximately the same amount of wastewater would be generated daily. The Water Department is not anticipated to have difficulty providing service to the site.[2] Water consumption at project completion may prove to be less than with the previous light industrial use. The Sanitary Engineering Division of the Department of Public Works maintains a three-by-five foot brick sewer on both Bryant Street and Second Street which would serve the project. The Sanitary Engineering Division did not express any concern for potential impacts generated by this project or cumulative development in the project area.[3]

The proposed project is within the San Francisco Police Department jurisdiction of Southern Station. The crime analysis/planning division has been contacted to determine what impacts the project could have on police protection. Projects of this magnitude do not generate a demand for police services that would require additional manpower or equipment.[4] Cumulatively, however, this project and others under construction or proposed for the South of Market area could contribute to the overall potential increase in demand for police protection. Street activity due to increased development could decrease the incidence of crime related to empty streets, such as violent sidewalk robberies. The project, however, would have a complete internal security system with security guards and video surveillance.

Office developments of the size proposed for this site do not generate adverse impacts or cause difficulty in the provision of utility service from either PG&E[5] or Pacific Telephone.[6]

Public utilities and services will not be discussed further in the EIR.

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[1]Fiore Garbarino, Manager, Golden Gate Disposal, telephone conversation, May 12, 1982.

[2]Cy Wentworth, Water Estimator, City Distribution, San Francisco Water Department, telephone conversation, October 27, 1982.

[3]Nat Lee, Engineering Associate II, Sanitary Engineering, Clean Water Program, Department of Public Works, telephone conversation, October 27, 1982.

[4]Sergeant James H. Farrell, Crime Analysis Unit, San Francisco Police Department, letter, November 19, 1982.

[5]George Pravana, BIC Engineer, PG&E, telephone conversation, October 27, 1982.

[6]Paul H. Hampton, Manager-Engineering, Pacific Telephone, letter, November 2, 1982.

	Yes	No	Discussed
8. Biology. Could the project:			
a. Substantially affect a rare or endangered species of animal or plant or the habitat of the species?	___	X	___
b. Substantially diminish habitat for fish, wildlife or plants, or interfere substantially with the movement of any resident or migratory fish or wildlife species?	___	X	___
c. Require removal of substantial numbers of mature, scenic trees?	___	X	___

The only vegetation existing on the site are the street trees recently planted by the project sponsor. There will be no further discussion of this subject in the EIR.

9. Geology/Topography. Could the project:			
a. Expose people or structures to major geologic hazards (slides, subsidence, erosion and liquefaction)?	___	X	X
b. Change substantially the topography or any unique geologic or physical features of the site?	___	X	X

The project site is at elevation 40 feet (San Francisco Datum).[1] The site is underlain by 3 to 8 feet of fill and 0 to 34 feet of mixed clay and sand overlying weathered bedrock.[2] Bedrock in the area consists of deeply weathered and fractured Franciscan Formation[3] sandstone and shale.[4] These sediments increase in strength and hardness with depth.[5] The overlying mixed clay and sand probably represents the Colma Formation[2] and is competent foundation material.[2] Groundwater was encountered between -7 and -20 feet SFD.[2]

There are no active faults on the proposed project site. An inactive fault atop Rincon Hill is approximately 0.2 mile east of the site;[6] no known historic ground failures are directly associated with this fault.[7] There are four major fault zones in the San Francisco Bay Area capable of causing strong ground motion at the proposed project site.[8] The San Andreas Fault and Seal Cove Fault are located off the Pacific shore approximately 9 miles and 14 miles, respectively, from the project site. The Hayward Fault and Calaveras Fault are approximately 10 and 20 miles east of the site. Each of these systems is considered active and is capable[9] of generating a major earthquake (greater than magnitude 7 on the Richter scale) during the projected useful lifetime of the structures[10] at this site (at least 50 years).

Seismically, the site is relatively stable. Estimates of "strong" intensity of future groundshaking are based on a seismic event similar to that of the 1906 San Francisco earthquake.[11] The project area is in a seismically active region which annually experiences low to moderate magnitude earthquakes epicentered within the major fault zones. In 1979, a moderate earthquake (Richter magnitudes 4.2) occurred along the San Andreas Fault and two moderate earthquakes (Richter magnitudes 4.8 and 5.9) occurred along the Calavaras Fault.[12] Three earthquakes of Richter magnitude 5.5 to 5.9 occurred along the Calaveras Fault in 1980.[13] Based on records of previous earthquakes, the groundshaking at the site during a seismic event the size of the 1906 San Francisco earthquake (Richter magnitude 8.3) would be "strong," involving cracking of masonry and brick work. Groundshaking intensity would vary from strong to violent within a three-block radius of the project site.[11] For planning purposes, it is reasonable to assume a 59- to 105-year return period for this type of earthquake.[14] Since the soil and bedrock on which the project would be founded are competent foundation material ground motion would be of fairly low amplitude with correspondingly little damage to structures.[11]

Buildings 1 and 4 are to be upgraded to resist seismic loading by the addition of a steel frame on new spread footings with a 200% safety factor against ultimate soil failure under designed loads. The existing foundations of Building 2 are performing favorably and would adequately support anticipated design loads from the proposed shear walls (seismic upgrading). The new loads would not exceed current load designs. Building 3 would need new spread footing foundations set on bedrock to support the structure's core and the two towers proposed for the roof. The new foundations would have a design safety factor of 200% and would be at the same level as existing foundations. New loads placed on existing foundations would not exceed their bearing capacity and would cause less than one-fourth inch of settlement. The proposed building modifications would be required to meet the specifications of the San Francisco Building Code for seismic design concerning the amount of allowable sway, the attachment of partitions and decorative elements, and the provision of emergency electricity and water service.

The geotechnical investigation found no constraints which would preclude the development of the project as proposed.[2] Specific construction observation, foundation, drainage, and retaining wall design recommendations were made which would be included in the project.[2]

The nearby elevated approach structures at the west end of the Bay Bridge are subject to failure during a great earthquake (Richter magnitude 8.0+) although total collapse can be discounted.[15] The bridge will probably be closed for at least 72 hours as will most of the Downtown Freeway System (I-280, U.S. 101, James Lick Skyway).[15] To respond quickly and effectively after an earthquake disaster the project's managers would develop an Emergency Response Plan. (See Section 12. Hazards).

The project site is not in an area of potential liquefaction[16] hazard, tsunami[17] inundation hazard or landslide hazard.[18]

Based on the information and procedures described in this section, the construction of the proposed project would not expose people or structures to major geologic hazards. There would be no change of site topography. There are no unique geologic features on the site. These matters require no further discussion in the EIR.

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[1]The San Francisco Datum is approximately 8.6 feet above mean sea level.

[2]Stimac, T. J. and J.P. Bowers, Geotechnical Investigation, Second Street Square, Second and Bryant Streets, San Francisco, California, Harding Lawson Associates, San Francisco, California, Plates 1 through 8, pages 7 through 16. This report is on file with the Office of Environmental Review, 450 McAllister Street, 5th floor.

[3]Franciscan rocks are typical of the northern California Coast Ranges and underlie the hills of San Francisco. They consist of a mixture of dark muddy sediments, red, green and brown cherts and lava flows of black basalt; all material laid down on the floor of the Pacific Ocean about 100 million years ago. Cherts are rocks formed by deposits of silica containing microorganisms, which are transformed into hard, waxy or porcelain-like rocks. See Roadside Geology of Northern California, David D. Alt and Donald H. Hyndman, Mountain Press Publishing Company, Missoula, Montana, 1975. Also known as Franciscan Formation or Franciscan Assemblage.

[4]Bowers, J.P. and H.T. Taylor, Geotechnical Investigation, Second and Folsom Project, San Francisco, California, Harding Lawson Associates, San Francisco, California, page 4.

[5]Colma Formation: Fine-grained sands with silt and clay at the top, grading into cleaner sand at the bottom. The lower part of the formation is very dense and is slightly cemented in places.

[6]Schlocker, J.; Geology of the San Francisco North Quadrangle, California, U.S. Geological Survey, Professional Paper 782, 1974, Plate 1, scale 1:24,000.

[7]Youd, T.L. and S.N. Hoose, Historic Ground Failures in Northern California Triggered by Earthquakes, U.S. Geological Survey, Professional Paper 993, Washington, D.C., 1978, 177 pages.

[8]California Division of Mines and Geology; Fault Map of California, Data Map Series No. 1, 1975.

[9]Richter scale: a logarithmic scale developed in 1935 by Charles Richter to measure

earthquake magnitude by the energy released, as opposed to earthquake intensity as determined by effects on people, structures and earth materials.

[10]Greensfelder, R.W., Maximum Credible Rock Accelerations from Earthquakes in California, California Division of Mines and Geology, Map Sheet 23, Sacramento, California, 1974, Plate 1.

[11]URS/John A. Blume and Associates, San Francisco Seismic Safety Investigation, San Francisco, California, June 1974, page 14 and Figure 3.

[12]Earthquakes in the United States, 1979, U.S. Geological Survey Circular 836, 1980-1981, pages B19, C19, C27.

[13]Preliminary Determination of Epicenters, Monthly Listings, U.S. Geological Survey, 1980-1981.

[14]Shedlock, K.M., R.K. McGuire and D.G. Herd, Earthquake Recurrence in the San Francisco Bay Region, California, from Fault Slip and Fault Moment, U.S. Geological Survey, Open-File Report 80-999, 1980.

[15]Davis, J.F., et. al, Earthquake Planning Scenario for a Magnitude 8.3 Earthquake on the San Andreas Fault in the San Francisco Bay Area, California Division of Mines and Geology, Special Publication 61, 1982, pages 54, 55, 58, 60, Map 1-HA.

[16]Liquefaction: Earthquake-induced transformation of a stable granular material, such as sand, into a fluidlike state, similar to quicksand. Office of Environmental Review, Standard Definitions, San Francisco, California, November 15, 1982.

[17]Tsunami: Long-period waves generated by earthquakes, undersea landslides or volcanoes; upon reaching the shallow water of coastal areas, the waves greatly increase in height and may cause localized flooding.

[18]URS/John A. Blume and Associates, San Francisco Seismic Safety Investigation, San Francisco, California, June 1974, Figures 4, 5 and 7.

	Yes	No	Discussed
10. Water. Could the project:			
a. Substantially degrade water quality, or contaminate a public water supply?	___	X	X
b. Substantially degrade or deplete ground water resources, or interfere substantially with ground water recharge?	___	X	X
c. Cause substantial flooding, erosion or siltation?	___	X	X

There is no surface water at the site. The site is currently impervious, covered by existing buildings. The proposed project would not alter this situation. Runoff would

continue to drain into the combined City storm/sewer system. As indicated in this discussion under Utilities and Public Services, page 17 of this document, existing sewer mains would be adequate to handle increased wastewater flows as well as storm drainage.

The existence of groundwater within two feet of the floorslab of Building 3 indicates underslab drainage may be necessary. A sump pump in the basement suggests past problems with high groundwater. The existing pump and drainage system could continue to be used since the floorslab would not be lowered.[1,2]

If groundwater is encountered during excavation for the new foundations, the contractor would shore up and protect the pit walls from groundwater infiltration. The pit would be kept clear of water by sump pumping rather than areawide dewatering. A siltation basin/filter system would be used to avoid adding sediment to the City storm/sewer system.

Since the existing storm/sewer system would be adequate to handle increased wastewater flows and storm drainage and since the project would not contribute to any public water supply, construction of the proposed project would not have the potential to degrade water quality or contaminate a public water supply. This matter does not require any further study in the EIR.

Since there is currently no groundwater recharging at the site and since none is proposed, and since groundwater level outside the project site would not be lowered, there is no potential to degrade or deplete groundwater resources or interfere with groundwater recharge. These matters require no further study in the EIR.

Since the project would not create any flood-prone conditions and since the project sponsor proposes to control erosion and siltation on-site, there is no potential to cause substantial flooding, erosion or sedimentation. These matters require no further discussion in the EIR.

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[1] Stimac, T.J. and J.P. Bowers, Geotechnical Investigations, Second Street Square, Second and Bryant Streets, San Francisco, California, Harding Lawson Associates, San Francisco, California, page 13. This report is on file with the Office of Environmental Review, 450 McAllister Street, 5th floor.

[2] Don Davella, Plant Brothers Corporation, telephone conversation, February 3, 1983.

	Yes	No	Discussed
11. Energy/Natural Resources. Could the project:			
a. Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner?	___	X	X
b. Have a substantial effect on the potential use, extraction, or depletion of a natural resource?	___	X	___

On-site energy consumption in 1981 for the project site (printing operations at partial capacity) totaled 3,094,000 kilowatt hours of electricity and 9,713,000 cubic feet of natural gas. This is equivalent to about 41 billion BTU of energy which is the amount of energy contained in about 7,400 barrels of oil. This energy was used for heating, cooling, ventilation, lighting, service water heating, operation of machinery for printing and operation of other equipment and appliances. The electricity which is supplied by PG&E is generated from oil, gas, hydroelectric power, geothermal energy, nuclear power, and small amounts of wind power, solid waste and cogeneration.

The project sponsor is committed to designing an energy efficient project which exceeds the minimum energy efficiency requirements of Title 24 of the California Administrative Code. A report on electrical and mechanical considerations for the project has been prepared by G.M. and T.R. Simonson, Consulting Engineers, and is on file with the Office of Environmental Review, 450 McAllister Street, 5th floor. The report describes, the tentative recommendation for the mechanical and electrical design, which encompasses the principal energy using components of the project.

The report specifically recommends a series of energy conservation measures. These include:

individual metering for tenants

automated energy management
- automated lighting schedule
- economizer cycle on air handlers
- controlled warm-up in winter
- starting and stopping fans
- billing functions

no mechanical cooling
operable windows where feasible

passive solar feature
- window shading
- reduced glazed area
- double glazing
- reflective or heat absorbing glass
- specially selected draperies or blinds

small cooling tower for tenant-related cooling needs

Based upon estimates made by G.M. Simonson and T.R. Simonson, Consulting Engineers,[1] the project would consume about 1.9 kilowatt hours of electricity per square foot per month and about 35 BTU per square foot per day of natural gas. Average monthly total energy consumption would be about 8.6 billion BTU of energy, equivalent to about 1,500 barrels of oil. Connected load would be about 3,600 KW. Load profiles would be expected to appear similar in shape to those shown in Figures 7 and 8, pages 24 and 25[2]. Electrical use would reach a peak on hot summer afternoons of about 3,200 KW. Natural gas use would reach a peak of about 300 therms on cold winter days. Energy impacts will be discussed in the EIR.

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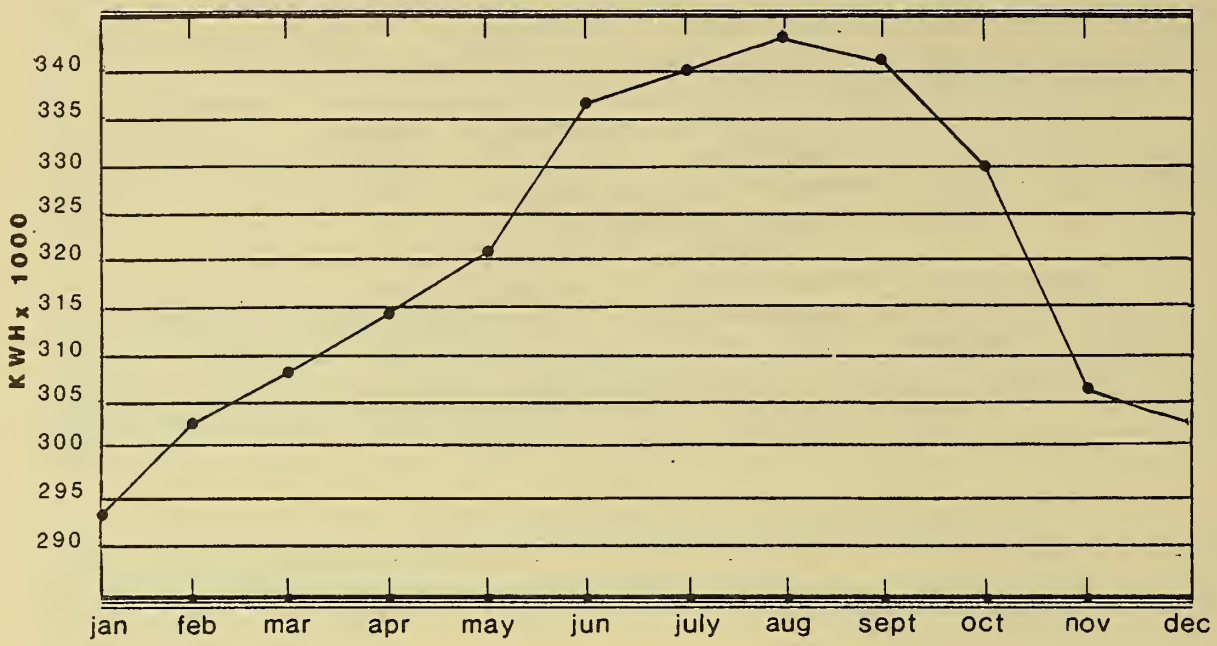
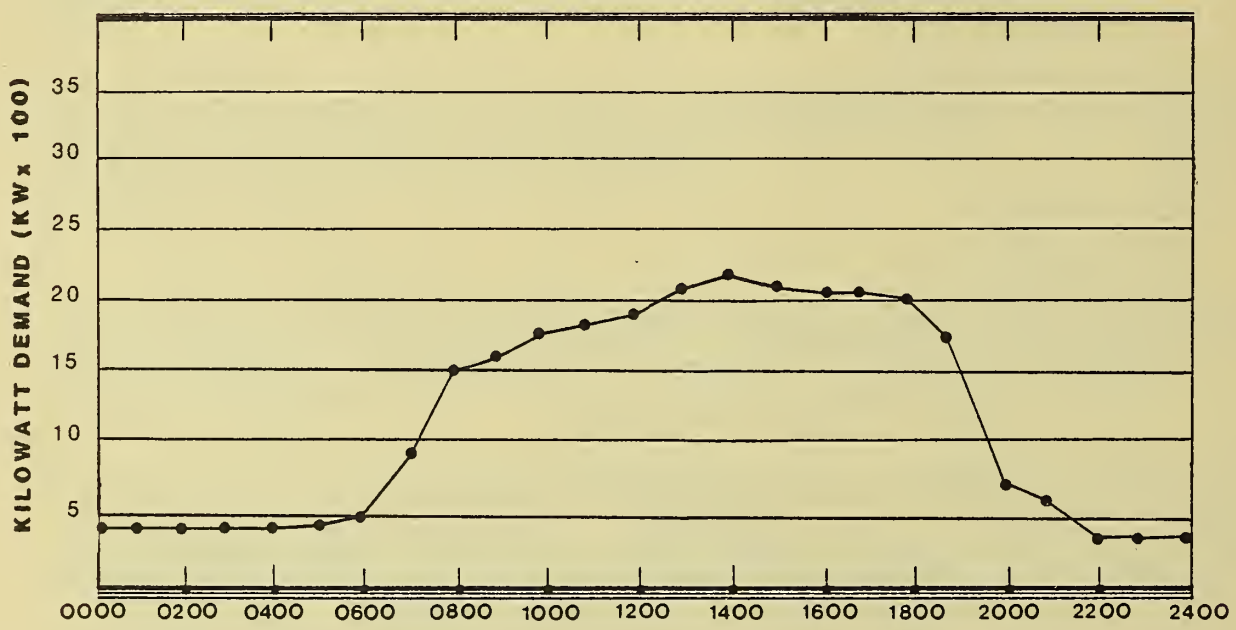
[1] T.R. Simonson, P.E., Partner, G.M. Simonson and T.R. Simonson, Consulting Engineers, San Francisco, telephone conversation, February 3, 1983.

[2] These figures are taken from: Department of City Planning, Final Environmental Impact Report, 315 Howard Street Office Building, certified August 21, 1980.



MONTHLY CONSUMPTION



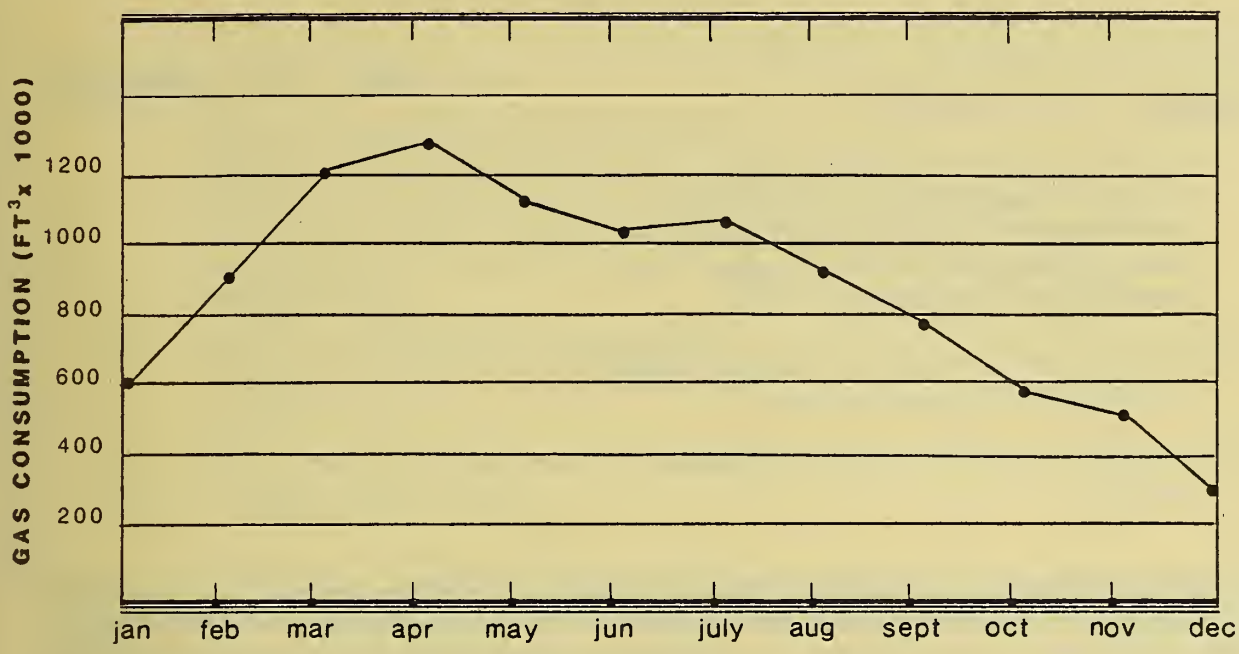
HOURLY CONSUMPTION

SOURCE: Department of City Planning, City and County of San Francisco, Final EIR, 315 Howard Street Office Building, Certified August 21, 1980

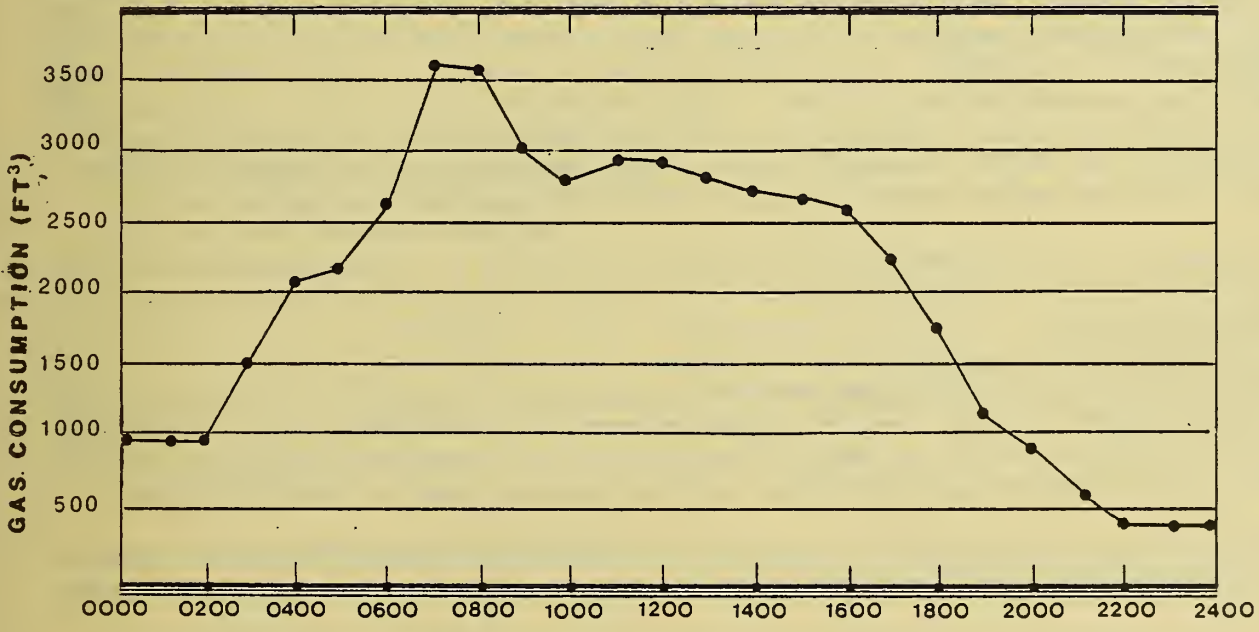
These figures are typical of electrical consumption patterns in San Francisco insofar as monthly consumption patterns vary based largely upon outside temperature and hourly consumption varies with occupancy rates.

Second Street Square

ESTIMATED ELECTRICAL CONSUMPTION 7



MONTHLY CONSUMPTION



HOURLY CONSUMPTION

SOURCE: Department of City Planning , City and County of San Francisco, Final EIR, 315 Howard Street Office Building, Certified August 21, 1980

These figures are typical of electrical consumption patterns in San Francisco insofar as monthly consumption patterns vary based largely upon outside temperature and hourly consumption varies with a occupancy rates.

Second Street Square

ESTIMATED GAS CONSUMPTION

8

12. Hazards. Could the project:	Yes	No	Discussed
a. Create a potential public health hazard or involve the use, production or disposal of materials which pose a hazard to people or animal or plant populations in the area affected?	___	X	___
b. Interfere with emergency response plans or emergency evacuation plans?	___	X	___
c. Create a potentially substantial fire hazard?	___	X	X

The Planning and Research Division of the San Francisco Fire Department has stated that additional staff or equipment would not be required due to construction of this project.[1] However, additional manpower and fire stations may be required due to the continued growth of this area.

The high pressure system is presently adequate for fire fighting in the project area. As part of the low pressure/domestic system, the area contains some 4-inch dead end mains, which could present a problem in the event of a large fire. The fire department indicated that there may be a need for eliminating these dead ends and for upgrading the water mains from 4- to 6-inches to an 8-inch minimum in order to provide adequate water capacity and pressure for large fires. These new services would likely be required with the cumulative growth of large projects. The upgrading of these facilities could result in the disruption of traffic in areas of water main construction. The project will have a complete sprinkler system with 24-hour fire monitoring capability and central alarm.

The change in use in the building from lithography/printing to office will reduce the fire hazard on-site. The project would also be required to conform to the more stringent fire codes now in effect.

Although the project would not generate any unusual impacts the Fire Department expressed concern for the cumulative development in the project area. The need to increase the water supply as well as fire stations and manpower will grow with the demand fostered by increased population and high-rise structures in the project area.[1]

The following paragraph has been approved by the Mayor's Office of Emergency Services and by the Department of City Planning for inclusion in environmental review documents:

> An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to ensure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management before issuance by the Department of Public Works of final building permits.

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[1] Edward J. Phipps, Assistant Chief, Support Services, San Francisco Fire Department, letter, October 22, 1982, and telephone conversation, December 3, 1982.

13. Cultural. Could the project:	Yes	No	Discussed
a. Disrupt or adversely affect a prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group; or a paleontological site except as a part of a scientific study?	___	X	___
b. Conflict with established recreational, educational, religious or scientific uses of the area?	___	X	___
c. Conflict with preservation of any buildings of City landmark quality?	___	X	___

Exterior construction would be limited to additions on the roof of Building 3 and relocation of the pedestrian overpass. The excavation required for the upgrading of foundations would occur in existing disturbed soils.

None of the existing buildings are listed as landmarks. The clock tower is highly visible and not scheduled for exterior alteration. Cultural matters will not be addressed in the EIR.

C. OTHER	Yes	No	Discussed
Require approval of permits from City Departments other than DCP or BBI, or from Regional, State or Federal Agencies?	X	___	X

The relocation of the pedestrian bridge would require approval by the Department of Public Works with advisory information supplied by the Real Estate Department. The Board of Supervisors and the Mayor would have final approval authority following Master Plan referral action by the City Planning Commission.

D. ALTERNATIVES			
Were other alternatives considered?	X	___	X

Other alternatives considered were:

1. No Project. The four existing buildings would be a combination of storage and vacant space.

2. A project without a Special Authorization from the Planning Code regarding parking

or bulk. The amount of additional office square footage proposed to be added on Building 3 would be reduced and more parking would be provided within existing buildings.

3. A project with less area used for offices and more square footage used for other uses such as wholesale commercial or showrooms.

4. A trade mart for electronics equipment that would occupy most of the area, with accessory office and retail space.

These alternatives will be analyzed in the EIR.

	Yes	No	N/A	Discussed
E. MITIGATION MEASURES				
1. If any significant effects have been identified, are there ways to mitigate them?	X			X
2. Are all mitigation measures identified above included in the project?	X			X

Mitigation measures currrently proposed as part of the project are listed below. Other mitigation measures may be identified during subsequent environmental review and will be included in the EIR.

The following measures are proposed as part of the project:

TRANSPORTATION

Transportation mitigation measures will be discussed in the EIR.

GEOLOGY

1. Buildings 1 and 4 will be upgraded to resist seismic loading by the addition of a steel frame on new spread footings with a 200% safety factor against ultimate soil failure under designed loads. Building 3 will also have new spread footing foundations.

2. Specific construction observation, foundation, drainage and retaining wall design recommendations contained in the geotechnical investigation for the site would be included in the project.

HAZARDS

3. An evacuation and emergency response plan would be developed by the project

sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to ensure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management before issuance by the Department of Public Works of final building permits.

UTILITIES/PUBLIC SERVICES

4. The project sponsor will encourage tenants to recycle white paper and computer cards.

5. The project will have a complete internal security system with security guards and video surveillance.

6. The project will have a sprinkler system with 24-hour fire monitoring capability and central alarm.

NOISE

7. Sound insulation features will be installed by the project sponsor to reduce impacts from traffic noise nearby (see Figures 2 and 3, pages 3 and 4, for building configuration). These will include:

   Building No. 1: Replace existing north facade windows with new acoustic double glazing; all windows not adjacent to the freeway will have an operable section to provide natural ventilation.

   Building No. 2: Reduce north east and west facade openings by 50% with panels of a finish to match the adjacent surface texture; no windows in this building will be operable due to the high exterior noise levels.

   Building No. 3: Replace existing windows at east, north, west and partial south facades with new laminated acoustic glass; all windows will have an operable section to provide natural ventilation.

   Building No. 3 (towers): The glazing of the east, north and west facades of the towers will be laminated acoustic glass in aluminum frames.

   Building No. 4: Replace existing windows with laminated acoustic glass in new aluminum frames; all windows will have an operable section to provide natural ventilation.

8. An interior pleasant sound mask will be used in portions of the project where it is necessary to cover unpleasant exterior noise.

VISUAL QUALITY

9. The project sponsor recently planted street trees along Second Street, Bryant Sreet and Federal Street.

10. All four of the project's existing buildings were recently painted to enhance architectural features.

ENERGY

Energy mitigation measures will be discussed in the EIR.

F. MANDATORY FINDINGS OF SIGNIFICANCE

	Yes	No	Disc.
1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	_	X	_
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	_	X	_
3. Does the project have possible environmental effects which are individually limited, but cumulatively considerable? (Analyze in the light of past projects, other current projects, and probable future projects.)	X	_	_
4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?	_	X	_
5. Is there a serious public controversy concerning the possible environmental effect of the project?	_	X	_

G. ON THE BASIS OF THIS INITIAL STUDY:

___ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

___ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers __, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

✓ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Robert W. Passmore
Assistant Director of
Planning-Implementation

for

Dean L. Macris
Director of Planning

Date: February 22, 1983

APPENDIX B

TRANSPORTATION

TABLE B-1

PEDESTRIAN FLOW REGIMES

Flow Regime	Walking Speed Choice	Conflicts	Average Speed Rate (P/F/M)[1]
Open	Free Selection	None	0.5
Unimpeded	Some Selection	Minor	0.5 - 2.0
Impeded	Some Selection	High Indirect Interaction	2.0 - 6.0
Constrained	Some Restriction	Multiple	6.0 - 10.0
Crowded	Restricted	High Probability	10.0 - 14.0
Congested	All Reduced	Frequent	14.0 - 16.0
Jammed	Shuffle Only	Unavoidable	16.0+

[1] P/F/M - Pedestrians per foot of sidewalk width per minute.

Source: Boris Pushkarev and Jeffrey M. Zupan, Urban Space for Pedestrians, Massachusetts, MIT Press, 1975.

TABLE B-2

LEVELS OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS[1]

Level of Service A

Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.

Level of Service B

Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.

Level of Service C

Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally must have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.

Level of Service D

Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.

Level of Service E

Capacity occurs at Level of Service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting upstream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.

Level of Service F

Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.

[1] City and County of San Francisco, Department of Public Works, Traffic Engineering Division.

APPENDIX B-3

MUNI PATRONAGE FOR P.M. PEAK PERIOD AT PEAK LOAD POINTS[1]

Volume/Capacity (V/C%) 1 Hour - 2 Hours

Line	Existing	Projected Without Project[2]	Projected With Office Project	Projected With Trade Mart
15	625/864 (72%) - 1,007/1,584 (64%)	797/1028 (78%) - 1,281/1,885 (68%)	819/1,028 (80%) - 1,319/1,885 (70%)	804/1,028 (78%) - 1,295/1,885 (69%)
17X	187/288 (65%) - 231/456 (51%)	238/343 (69%) - 292/543 (54%)	245/343 (71%) - 303/543 (56%)	240/343 (70%) - 296/543 (55%)
27	67/144 (46%) - 118/336 (35%)	86/171 (50%) - 151/400 (38%)	88/171 (51%) - 155/400 (39%)	87/171 (51%) - 153/400 (38%)
30	1,098/1,224 (90%) - 2,309/2,592 (89%)	1,399/1,457 (96%) - 2,959/3,084 (96%)	1,438/1,457 (99%) - 3,025/3,084 (98%)	1,412/1,457 (97%) - 2,985/3,084 (97%)
30 AX,BX	630/672 (94%) - 1,126/1,368 (82%)	803/800 (100%) - 1,437/1,628 (88%)	825/800 (103%) - 1,475/1,628 (91%)	810/800 (101%)- 1,451/1,628 (89%)
32	413/528 (78%) - 642/864 (74%)	526/628 (84%) - 816/1,028 (79%)	541/628 (86%) - 841/1,028 (82%)	531/628 (85%) - 826/1,028 (80%)
42	364/504 (72%) - 695/1,080 (64%)	464/600 (77%) - 888/1,285 (69%)	477/600 (80%) - 910/1,285 (71%)	468/600 (78%) - 896/1,285 (70%)
80X 81X	Lines operate express through project area.			

[1] San Francisco Department of City Planning, Guidelines for Environmental Review, July 1983.

[2] Projections assume 75% of project trips would be in peak direction.

TABLE B-4

OFFICE PROJECT TRIP GENERATION

Location and Mode	Office and Computer	Retail and Rec.	Less Printing Company	Net Increase
San Francisco	45%	89%	45%	
Auto	165/255	15/30	(55)/(75)	125/210
Muni	105/165	55/110	(35)/(50)	125/225
Bart	10/15	---	(5)/(10)	5/5
Other	10/15	355/710	(5)/(10)	360/715
Peninsula	16%	3%	16%	
Auto	75/120	15/30	(25)/(35)	65/115
BART	10/15	---	(5)/(10)	5/15
SP	15/25	---	(5)/(10)	10/15
SamTrans	5/10	---	---	5/10
Other	---	---	---	---
East Bay	26%	6%	26%	
Auto	110/175	10/20	(35)/(50)	85/145
BART	35/55	15/30	(10)/(15)	40/70
AC	20/30	5/10	(5)/(10)	20/30
Other	10/15	---	---	10/15
North Bay	13%	2%	13%	
Auto	65/100	5/10	(20)/(30)	50/80
GGT Bus	15/25	5/10	(5)/(10)	15/25
Other	5/10	---	---	5/10

TABLE B-5

MART PROJECT TRIP GENERATION

Location and Mode	Mart	Retail	Less Printing Company	Net Increase
San Francisco				
Auto	50/80	10/20	(55)/(75)	5/10
Muni	35/55	40/80	(35)/(50)	40/80
BART	5/10	5/10	(5)/(10)	5/10
Other	5/10	270/540	(5)/(10)	260/520
Peninsula				
Auto	25/35	---	(25)/(35)	---
BART	5/10	---	(5)/(10)	---
SP	5/10	5/10	(5)/(10)	5/10
SamTrans	5/10	5/10	---	10/20
Other	---	---	---	---
East Bay				
Auto	35/55	10/20	(35)/(50)	10/20
BART	10/15	10/20	(10)/(15)	10/20
AC	5/10	5/10	(5)/(10)	5/10
Other	5/10	---	---	5/10
North Bay				
Auto	20/30	5/10	(20)/(30)	5/10
GGT Bus	5/10	5/10	(5)/(10)	5/10
Other	---	---	---	---

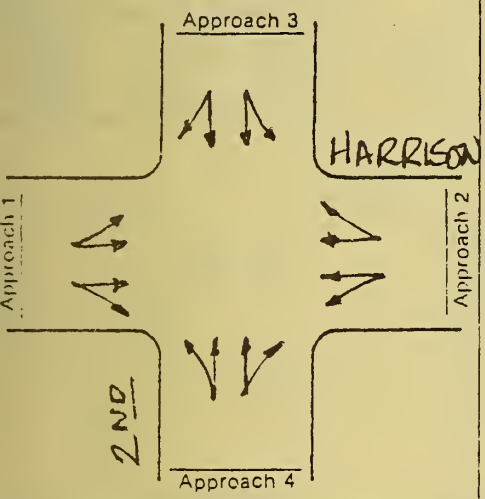
INTERSECTION CAPACITY ANALYSIS

4:30-5:30

Intersection 2ND / HARRISON Design Hour P.M. PEAK

Other Conditions EXISTING TRAFFIC (COUNTED 5/8/81)

1. Identify Lane Geometry



4. Left Turn Check

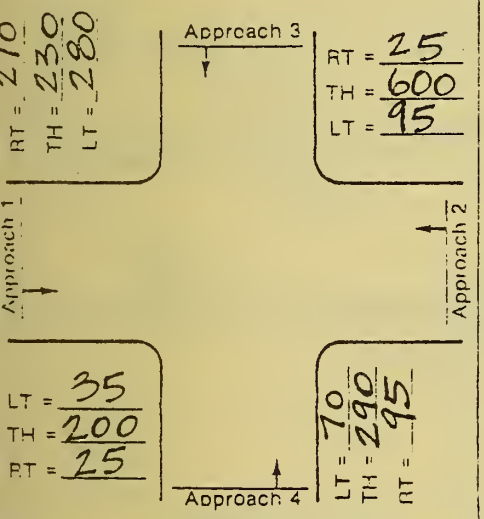
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

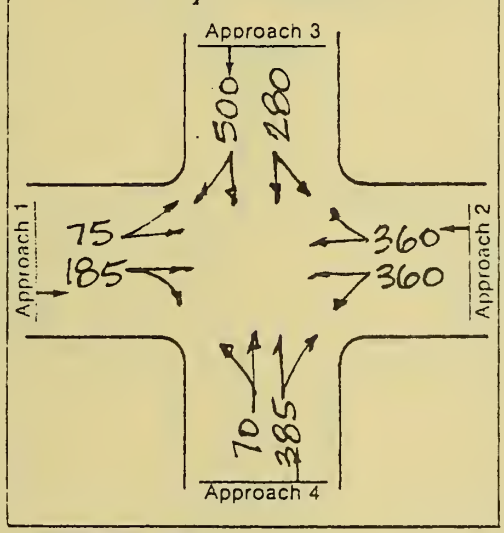
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2φ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

385 + 280 + 360 + 35

= 1060 vph

8. Intersection Level of Service

B/C

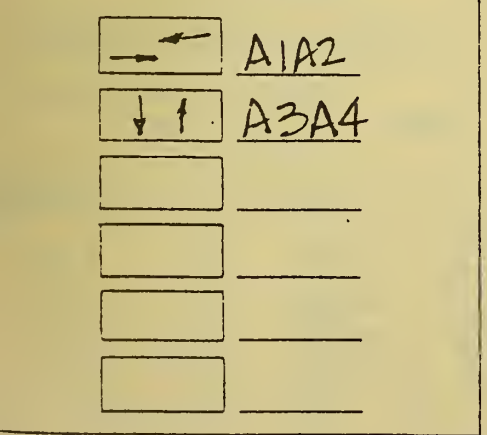
9. Recalculate

Geometric Change _____

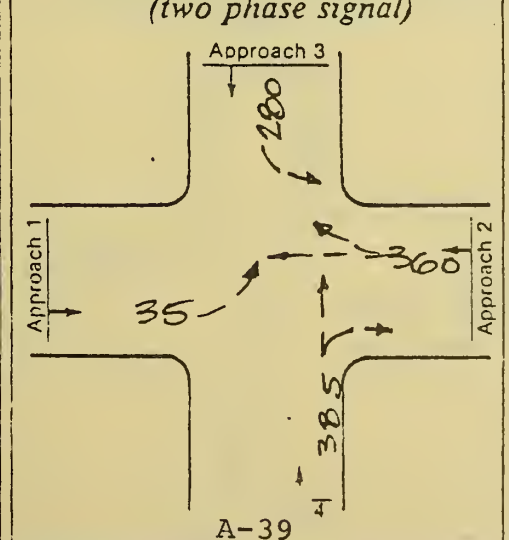
Signal Change _____

Volume Change _____

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

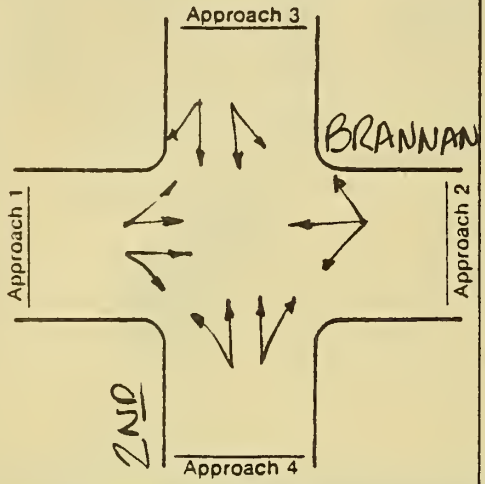
INTERSECTION CAPACITY ANALYSIS

4:30-5:30

Intersection 2ND / BRANNAN Design Hour PM. PEAK

Other Conditions EXISTING TRAFFIC (COUNTED 1/14/81)

1. Identify Lane Geometry



4. Left Turn Check

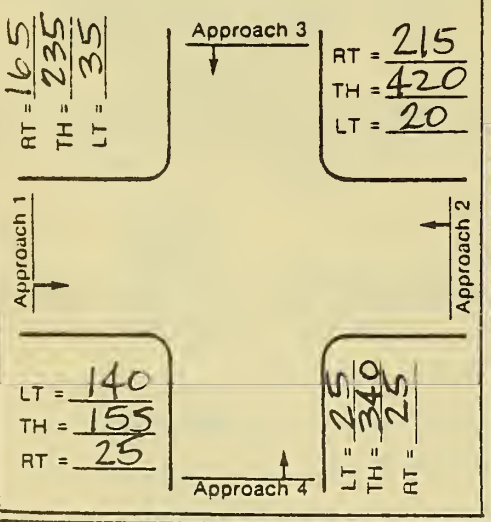
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

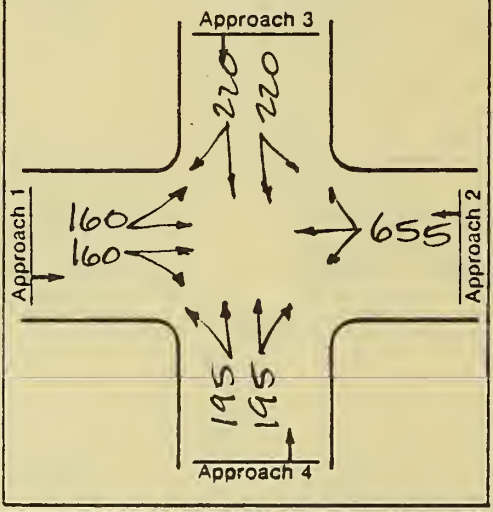
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2 ϕ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

635 + 140 + 220 + 25

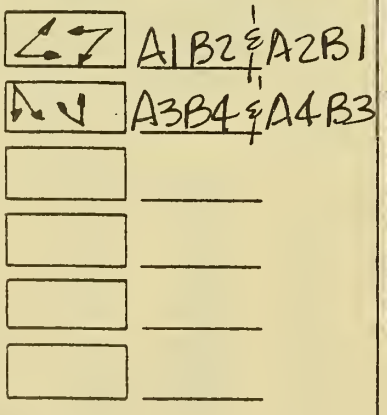
= 1020 vph

8. Intersection Level of Service

B

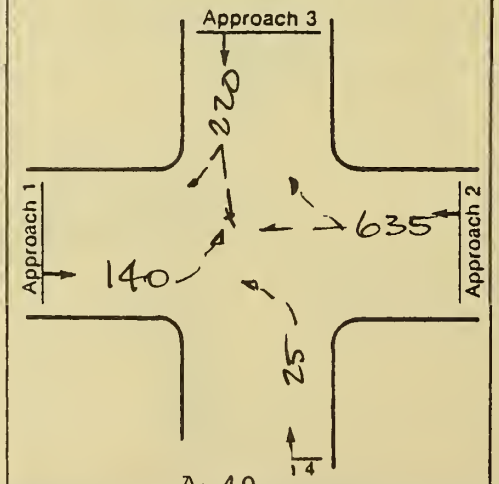
Notes:

3. Identify Phasing



A1 → A3 ↓	B1 ← B3 ↑
A2 ← A4 ↑	B2 → B4 ↓

6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

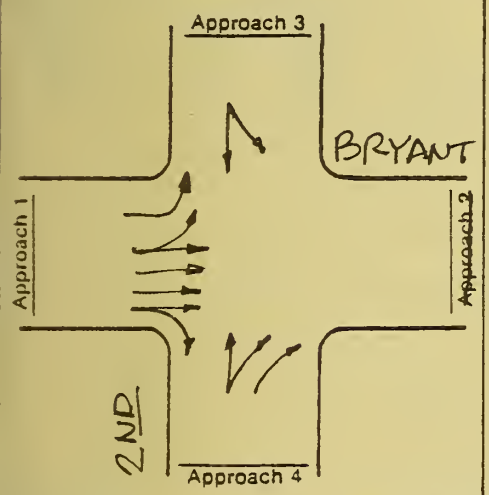
Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

INTERSECTION CAPACITY ANALYSIS

Intersection SECOND/BRYANT Design Hour 7:30-8:30 AM PEAK

Other Conditions EXISTING TRAFFIC (COUNTED 3/17/81)

1. Identify Lane Geometry



4. Left Turn Check

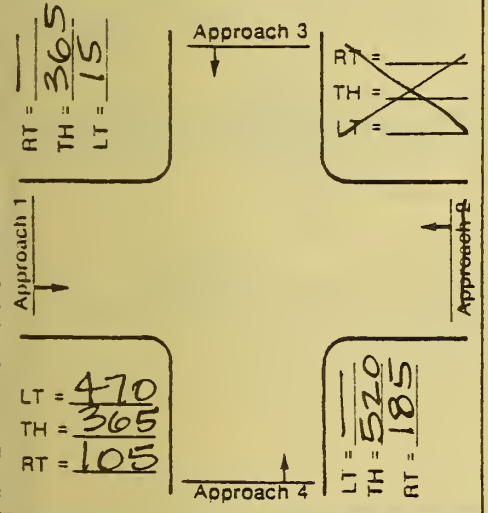
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

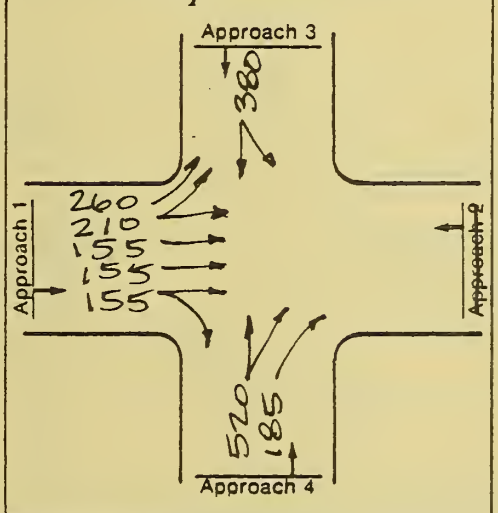
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2 ϕ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

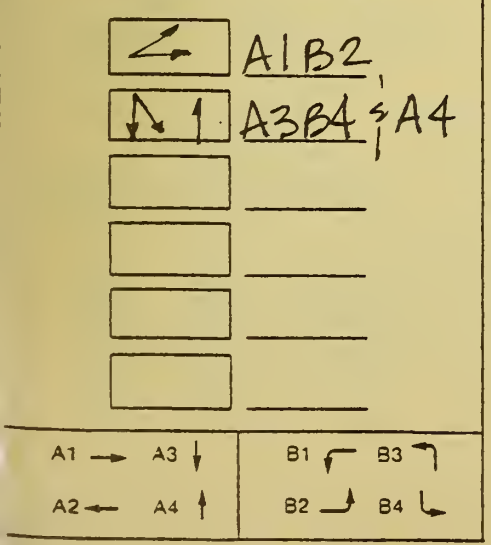
520 + 15 + 260 + — = 795 vph

8. Intersection Level of Service

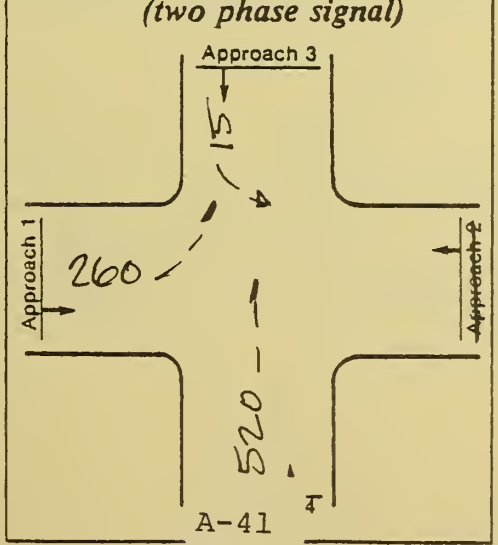
A

Notes:

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

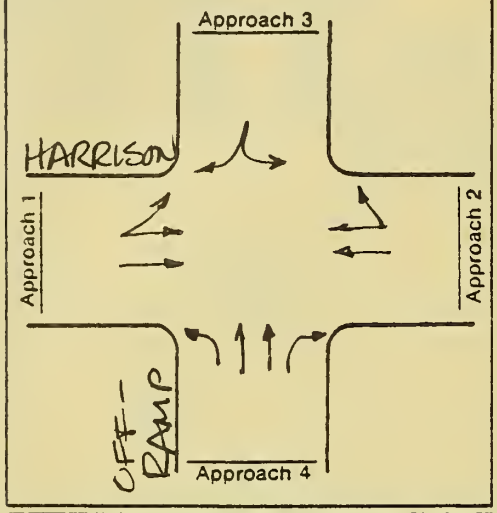
Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

INTERSECTION CAPACITY ANALYSIS

Intersection HARRISON / BRIDGE OFF-RAMP Design Hour AM PEAK 7:30-830

Other Conditions EXISTING TRAFFIC (COUNTED 3/19/81)

1. Identify Lane Geometry



4. Left Turn Check

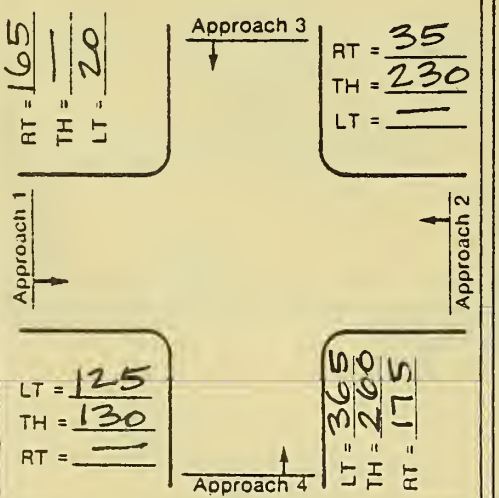
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

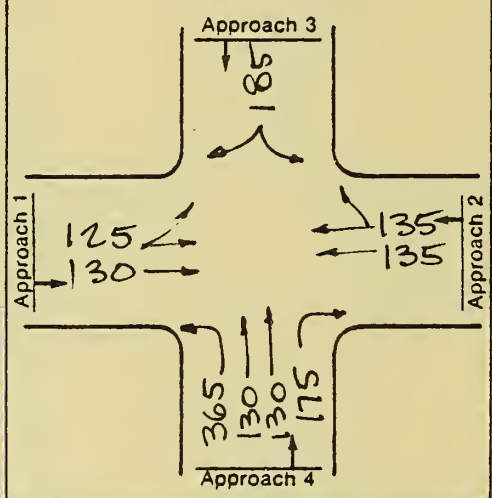
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2φ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

135 + 125 + 365 + 165

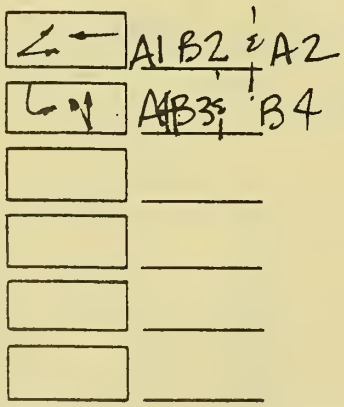
= 790 vph

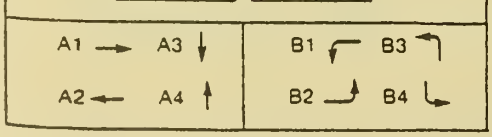
8. Intersection Level of Service

A

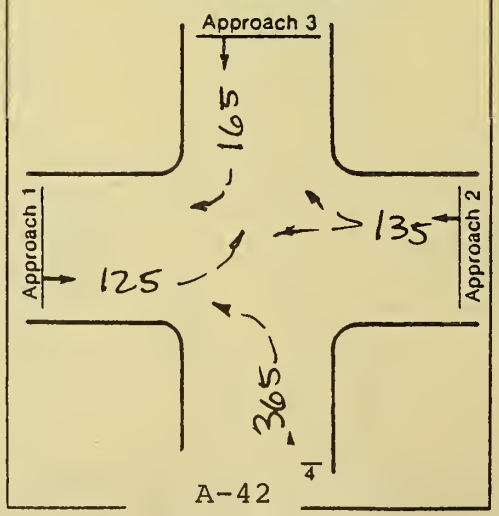
Notes:

3. Identify Phasing





6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

APPENDIX C
CUMULATIVE TRANSPORTATION IMPACT ANALYSIS METHODOLOGY

1. Travel Demand

Travel demand from the 17.3 million gross square feet of net new cumulative office development and 589,210 gross square feet of net new cumulative retail development in downtown San Francisco has been estimated using a land-use approach for trip generation. Future travel into the downtown has been assumed to be a result of construction and occupancy of downtown office and retail space. The Office of Environmental Review of the Department of City Planning (DCP) has identified office projects in the greater downtown area as being under formal review, approved or under construction. Table D-1 in Appendix D shows the list of projects separated by review status and includes Assessor's Block number and DCP case number for each project. The information contained in this table represents the best data available from the Department of City Planning at the time of preparation of this document.

Hotel projects have not been included in the cumulative analyses because hotel uses have different peaking characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit. Residential projects have not been included because residential travel in the downtown is generally in the contra-commute direction during peak-hours and because the office trip generation rate and modal split distribution are predicated on the assumption that housing would be available in the City. Thus, inclusion of residential projects would be double counting of project generated travel.

Projections of future travel have been made using trip generation rates of 17.5 person trip ends (one way trips) per 1,000 net leasable square feet or net new office space and 100 person-trips ends (pte) per 1,000 gross square feet of net new retail space.[1] Gross square feet of office space was converted to net leasable square feet by assuming an efficiency factor of 80%. The retail space has been assumed to be primarily "ground-floor retail" which would serve the office building users. Based upon survey data collected at the Embarcadero Center, approximately 45% of the travel generated by "ground-floor retail" uses has been assumed to be oriented to the office uses on-site and is already included in the office trip generation rate. Thus, 55% of the retail trip generation has been assumed to be "new" to each site.[2]

P.M. peak-hour travel from the cumulative development was assigned to modes of travel based upon the regional distribution and modal split shown in Table C-1, page A-47. During the p.m. peak hour about 20% of the office travel (15% in the South of Market area) 10% of the retail travel was assumed to occur. Of the office travel approximately 90% (during peak hours) was assumed to be work-related and 10% was assumed to be other travel. On a daily basis, office travel was assumed to be 57% work-related and 43% other travel.[3]

To calculate vehicle trip ends, average automobile occupancies were assumed for each regional area based upon available data. Currently, commute travel to the East Bay is about 1.8 persons per vehicle; the North Bay is about 1.5 persons per vehicle; and to the Peninsula is about 1.2 persons per vehicle.[4] San Francisco auto occupancy was assumed to be 1.4 persons per vehicle.[5] Occupancy for commute travel to/from the South of Market area was assumed to be 1.2, as indicated in the South of Market area survey.

A basic assumption in all of the transportation analyses is that existing regional distributions and modal splits would continue into the future unchanged. Thus, the implicit assumption has been made that about 40% of the future employees would live in San Francisco. If housing is not available in the City then a greater impact than noted would result on the commute corridors into the City from the North Bay, East Bay and Peninsula. If housing is not available in the City, however, the impact on the Muni would be less than noted because City residents are the majority of Muni users.

2. Employment Trend Approach to Cumulative Analysis

In this and other San Francisco EIRs, a land-use type of approach has been used to estimate the transportation impacts of both the proposed project and cumulative development. An alternate type of approach is to forecast travel demand based upon regional projections of employment share (employment trend approach).[6] Briefly, the fundamental differences between (and limitations of) the two approaches are:[7]

The land-use approach (as it has been applied in this EIR) has used net new office space actually proposed, approved or under construction (less space in buildings demolished to make way for new buildings) as the basis for travel generation. The land-use approach assumes that literally all of the currently proposed development in the downtown area will be constructed and fully occupied within the time frame proposed of the Second Street Square development and occupancy. No allowance has been made for less than 100%

occupancy, for proposed developments that are never constructed, or for those which would not be occupied within the time frame of the Second Street Square project.

The employment trend approach generates a total increase in employment in downtown that has taken account of loss of employment as industries and offices move out of the City, replacement of one type of industry with another (industry shifts), as well as, replacement of existing office space with new office space. The employment trend approach makes no implicit assumptions concerning occupancy rates or actual square footage of development constructed; rather, it generates total employment increases from a standpoint which assigns jobs by metropolitan sector (area) based upon extrapolation of past trends and which considers long-term industry shifts to, within, and away from each area.

Note that neither of the two approaches has attempted to project future changes in modal split.

To illustrate the differences in projections resulting from the two approaches, Table C-2 (page A-49) shows the total employment projections by the two methods (and the project's share thereof), the regional distribution of trips, and Muni's share of the new transit travel (and the project's share thereof).

As shown in the table, the employment trend approach predicts about 19% fewer employees in the downtown and about one percent less riders on the Muni than does the land-use approach. The employment trend approach would thus approximate the transit demand impacts discussed on pages 65-88 of the EIR.

Several considerations concerning both of the methods need to be noted. The land-use approach, as it has been applied in San Francisco EIRs, analyzes impacts for the p.m. peak hour, whereas the employment trend approach analyzes the a.m. peak. Several reasons exist as to why one peak (or the other) may be the better one to analyze.

First, the p.m. peak may be more useful to analyze, in that actual observation shows that the p.m. peak has a greater overall effect on the local street network and transit system in the downtown area than does the a.m. peak, as more travel takes place during the p.m. peak. Also, transit service is more inclined to differ from scheduled times during the p.m. peak than during the a.m. peak, as operational delays have had an 8- to 10-hour period

over which to accumulate. Finally, the on-ramps to the freeway/bridge system are greater bottlenecks (in the p.m. peak) than are the off-ramps (in the a.m. peak).

Conversely, the peaking characteristics of the a.m. peak may be more useful in that they are much sharper than those of the p.m. peak (i.e., a greater percentage of the peak-period occurs during a single hour). Also, as a result of the bridge system into San Francisco, travel inbound into the City is much easier to document, as tolls are collected on the inbound direction on the Golden Gate and Bay Bridges. Finally, a greater proportion of the travel occurring during the a.m. peak is employment-related; the p.m. peak includes shopping and pleasure trips which are not directly affected by increased office space.

The land-use approach, as it has been used in this Draft EIR, examines the p.m. peak because it has been observed to be the worst case for congestion on the City transportation system. This analysis does not reflect the spreading of the p.m. peak that is currently occurring, as all of the new trips have been assumed to take place in a single hour.

While the land-use approach assumes all new office space is fully occupied, the assumption of a functional vacancy rate of five percent is not uncommon.[6] With 17.3 million square feet of new office space assumed in the land-use approach to be occupied by 1990, a five percent vacancy would amount to approximately 865,000 square feet, representing 3,460 employees (at 250 square feet per employee), 700 of which would ride Muni in the p.m. peak hour. This adjustment for vacancy would thus reduce Muni peak-hour impacts in the cumulative analysis stated above by these 700 riders.

The land-use approach calculations have assumed transit capacity to be fixed at existing levels. The OER memorandum[7] points out, "It should be recognized that transportation is a more 'elastic' resource with many options for expansion including increasing existing capacity by using articulated vehicles, expanded car pool and van pool programs and increasing the peak commuter period through flex-time programs, among others."

If future office development does not occur along the lines of the past long-term trends as assumed in the employment trend approach, then the projections made in Working Paper I would be revised. The average annual growth during the period 1965-1980 was less than the growth per year proposed, approved, or under construction for the period 1980-1984.

The employment trend approach assumes average growth through 1990 would be at the lower historic rate, reflecting activity fluctuations from the current rate including slowdowns due to changing business conditions.

Until a forecast exists to determine how the current decade's cycle of development may differ from the past, a judgment of the applicability of results from Working Paper I may not be made. Consequently, this EIR has retained the land-use approach and presented this comparison of the employment trend approach. Both methods should be looked upon as describing potential scenarios of future conditions.

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[1]The regional distribution, office trip generation, trip purpose and peak hour percentage are from Attachment I of the Guidelines for Environmental Impact Review, Transportation Impacts, Department of City Planning, October 1980 and the modal split assignment is from Attachment 2 supplemented by survey data collected by Environmental Science Associates, Inc.

[2]Retail trip generation is from Trip Generation, Institute of Transportation Engineers (ITE), 1979. Rates have been adjusted from vehicle trip ends to person trip ends based upon an assumed vehicle occupancy of 1.4 persons per vehicle. The survey of retail travel was conducted by Environmental Science Associates at Embarcadero Center on Thursday, June 17, 1982 between 10:00 a.m. and 4:00 p.m.

[3]The percentage of work and non-work trips is from the Guidelines (see note 1) and from Urban Travel Patterns for Hospitals, Universities, Office Buildings, and Capitols, Report No. 62, National Cooperative Highway Research Program.

[4]East Bay auto occupancy is from data collected at the Bay Bridge toll plaza by the Metropolitan Transportation Commission; North Bay auto occupancy is from data collected at the Golden Gate Bridge toll plaza by the Golden Gate Bridge, Highway and Transportation District; Southern Peninsula auto occupancy is an estimate from Caltrans.

[5]The occupancy rate is from The Downtown Traffic and Parking Study, San Francisco Department of Public Works, 1970.

[6]Department of City Planning, Working Paper I, Projection of Long-range Transportation Demand, May 1982, prepared in cooperation with the Metropolitan Transportation Commission (MTC), the Association of Bay Area Governments (ABAG), and the Municipal Railway (Muni). Employment trend data was compiled by ABAG from trends in County Business Pattern (U.S. Department of Commerce, Bureau of the Census, March 12, 1979), with 1979 as the base year for future projections and regional distributions. Modal split data are from the 1975 Travel Survey prepared by MTC.

[7]The Department of City Planning, Office of Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-

use and employment trend approaches, and recommending that both approaches be used in future EIRs to give a more balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister Street, 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each approach.

TABLE C-1

TRAVEL DISTRIBUTION AND MODAL SPLIT FOR CUMULATIVE ANALYSIS

Geographic Area	OFFICE Work Travel Geog. %1	Mode	%2	Other Travel Geog. %1	Mode	%2	Retail Travel Geog. %1	Mode	%2
SAN FRANCISCO									
Downtown/Northeast	7.0			33.0			84.0		
(East of Van Ness, North of Market to the Embarcadero South of Market to 101)		Auto	9.0		Auto	2.0		Auto	3.0
		Muni	61.0		Muni	20.0		Muni	7.0
		BART	1.0		BART	0.0		BART	1.0
		Walk	29.0		Walk	78.0		Walk	89.0
Northwest	15.0			11.0			1.0		
(Richmond, Marina Western Addition)		Auto	31.0		Auto	15.0		Auto	10.0
		Muni	69.0		Muni	85.0		Muni	90.0
Southwest	13.0			13.0			2.0		
(Sunset, Parkside, Ingleside, Excelsior, Twin Peaks, and Upper Market)		Auto	29.0		Auto	12.0		Auto	10.0
		Muni	62.0		Muni	59.0		Muni	80.0
		BART	9.0		BART	19.0		BART	10.0
Southeast	5.0			7.0			2.0		
(Potrero Hill, Bayview, Hunters Point, East and South of 101)		Auto	26.0		Auto	13.0		Auto	10.0
		Muni	62.0		Muni	38.0		Muni	80.0
		BART	22.0		BART	50.0		BART	10.0
Peninsula	18.0			8.0			3.0		
(San Mateo and Santa Clara Counties)		Auto	44.0		Auto	50.0		Auto	25.0
		Muni	3.0		Muni	0.0		Muni	0.0
		BART	19.0		BART	30.0		BART	25.0
		SamT	7.0		SamT	10.0		SamT	0.0
		SPRR	27.0		SPRR	10.0		SPRR	50.0

TABLE C-1
(continued)

TRAVEL DISTRIBUTION AND MODAL SPLIT FOR CUMULATIVE ANALYSIS

Geographic Area	OFFICE								
	Work Travel			Other Travel			Retail Travel		
	Geog. %1	Mode	%2	Geog. %1	Mode	%2	Geog. %1	Mode	%2
EAST BAY	30.0			20.0			6.0		
(Alameda and Contra Costa Counties)		Auto	33.0		Auto	13.0		Auto	38.0
		BART	37.0		BART	79.0		BART	62.0
		AC	30.0		AC	8.0		AC	0.0
NORTH BAY3	12.0			8.0			2.0		
(Marin and Sonoma Counties)		Auto	58.0		Auto	70.0		Auto	70.0
		GGTB	35.0		GGTB	20.0		GGGTB	30.0
		GGTB	7.0		GGTB	10.0		GGTB	0.0

[1]Percent of travel with origins or destinations in each geographic area.

[2]Percent of travel in each geographic area using listed mode of travel.

[3]GGTB stands for Golden Gate Transit Bus; GGTF stands for Golden Gate Transit Ferry.

SOURCE: San Francisco Department of City Planning, TJKM, Environmental Science Associates.

TABLE C-2

COMPARISONS OF LAND-USE AND EMPLOYMENT TREND APPROACHES

Approach	Downtown Employment Increase	Project[1] Share	Regional Trip Share S.F.	Pen.	E.B.	N.B.	Muni[2] Peak-hour Increase	Project[3] Share
Land Use	69,000	1.9%/ 0.8%	49%	16%	24%	11%	12,750 (trips)	0.9%/ 0.5%
Empl. Trend[4]	56,100	2.4%/ 1.0%	54%	19%	21%	10%	12,900[5] (trips)	0.9%/ 0.5%

NOTE: As explained in the text, comparisons between the entries for the two approaches must be made with the understanding that the land-use approach reflects increases in employment and transit demand based solely upon increases in downtown office space, while the employment trend approach reflects total increases therein based upon historical trends. The differences among the regional trip share figures reflect these and the other differences between the two approaches.

[1] Employment generated by the proposed Second Street Square project, as a percent of the cumulative downtown employment increase. Listed percentages are for the office project/trade mart project.

[2] The Muni peak-hour increase is a demand projection (based upon existing and long-term employment trends) that is not dependent upon available or expected transit capacity.

[3] Muni peak-hour trips generated by the proposed Second Street Square project, as a percent of the cumulative downtown Muni peak-hour increase. Listed percentages are for the office project/trade mart project.

[4] These figures, represent the worst-case analysis under the employment trend approach reviewed and accepted by MTC, ABAG and Muni. Note that the land-use approach entries assume that an additional net new 17.3 million gross square feet of office space will come on line by late 1990.

[5] Based on 54 percent regional trip split to San Francisco (worst-case).

APPENDIX D

CUMULATIVE DEVELOPMENT

The list of projects shown in Table D-1, page A-54 includes all office projects in the greater downtown area and the South of Market area that are under construction or have been approved, and all projects for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined, and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission. The fourth classification of projects includes projects that have been completed or are nearly completed and have received temporary certificates of occupancy for 50% or more of the building. These projects have not as yet been included in the baseline data for analyses and are therefore included in the cumulative analysis of future impacts. Projects that were not definitive and/or appear to be inactive or withdrawn by the project sponsor were not included in Table D-1 or the cumulative analyses.

Two redevelopment areas (Yerba Buena Center and Rincon Point - South Beach) and one private development (Mission Bay) are located in or near the greater downtown area. In the redevelopment areas the majority of building sites do not yet have Land Disposition Agreements (LDA) approved. Until such time as specific LDA's are approved, no estimate of travel demand can be made. (Thus, parcels for which no LDA exists have not been included in the cumulative analyses.) Development in the Yerba Buena Center (YBC) Redevelopment Area will be in accordance with the YBC Redevelopment Plan, as amended. Possible land uses that would be in accordance with the Yerba Buena Center Redevelopment Area Plan include commercial entertainment, convention facility (in place), cultural, downtown support service, exhibit/ballroom space, hotel rooms, institutional, light industry, market-rate dwelling units, subsidized dwelling units, office, park or plaza, pedestrian concourse, parking and, retail.[1] Possible land uses in the Rincon Point - South Beach Redevelopment Area include hotel, housing, office, open space, public parking, retail and, warehouse uses.[2] Mission Bay has not been included in the cumulative analyses as no application has been submitted to the City and it is uncertain what formal proposal may be made.

APPENDIX D

(continued)

Existing office and retail space that would be replaced by new buildings was subtracted from the proposed new construction to better approximate the impacts the new buildings would have on transportation facilities. As shown in Table D-2, net new office and retail space is less than total new construction as a result of subtracting out existing office and retail space on sites proposed for new buildings. ("Net new" space is used to refer to the amount of new construction in excess of existing space on each site in terms of gross square feet of floor space. It does not refer to net leasable or net rentable floor space.)

Existing major office building construction in San Francisco is shown in Table D-3.

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[1]Land uses from Draft Second Supplement Yerba Buena Center Final Environmental Impact Report, San Francisco Department of City Planning, May 28, 1982.

[2]Land uses from Rincon Point - South Beach Redevelopment Area, San Francisco, California, Final Environmental Impact Report/ Environmental Impact Statement, San Francisco Department of City Planning, certified November 5, 1980.

APPENDIX D

TABLE D-1

CUMULATIVE DOWNTOWN DEVELOPMENT
AS OF JUNE 1, 1983

PROJECTS UNDER FORMAL REVIEW

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
110	82.129E	Embarcadero Terraces	139,000	139,000	3,000	3,000
113	82.418E	1171 Sansome	30,000	30,000	---	---
225	81.403ED	814 Stockton	3,500	3,500	3,300	3,300
227	81.463E	505 Montgomery	354,300	300,570	12,100	-4,775
258	81.131E	Pine/Kearny	315,800	315,800	6,750	6,750
288	81.687ED	222 Kearny/Sutter	269,400	202,400	10,000	-8,400
331	81.448E	Mixed Use Development (M)	218,600	210,100	44,700	19,700
641	82.200CY	1735 Franklin (C)	8,600	8,600		
669	81.667ED	1361 Bush (C)	45,720	45,720	---	---
814	81.540E	101 Hayes	126,000	126,000	6,000	6,000
3702	81.549ED	1145 Market	137,500	108,500	8,000	8,000
3707	81.245DA	New Montgomery Place	227,500	209,700	2,200	-3,900
3708	81.493ED	71 Stevenson	324,600	324,600	6,200	6,200
3717	81.183E	123 Mission	342,800	342,800	---	---
3733	82.29E	832 Folsom	50,000	50,000	---	---
3750	82.241E	600 Harrison	228,000	228,000	10,000	10,000
3750	82.77E	642 Harrison (C)	54,400	45,900	---	---
3760	81.386	401 6th	7,000	7,000	---	---
3763	82.384EVD	400 2nd Street at Harrison (C)	71,500	49,500	---	---
3778	81.630ED	548 5th/Brannan	250,000	250,000	---	---
3786	82.33E	655 5th/Townsend	126,250	126,250	---	---
3788	82.352EV	640 2nd Street	39,100	37,400	---	---
3789	82.31EV	615 2nd/Brannan (C)	90,000	70,000	9,300	9,300
9900	81.63	Ferry Building Rehab	309,500	96,000	163,500	124,000
	TOTAL PROJECTS UNDER FORMAL REVIEW		**4,679,970**	**4,141,540**	**320,050**	**214,175**

(C) = Conversion (generally industrial and/or warehouse to office)
(M)= Mixed Use (office/residential/commercial)

TABLE D-1
(continued)

APPROVED PROJECTS

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
58	82.234E	Roundhouse	45,000	45,000	3,000	3,000
65	82.168V	990 Columbus	12,000	12,000	---	---
112	81.258	Ice House Conversion (C)	209,000	209,000	---	---
136	81.245	955 Front at Green	50,000	50,000	---	---
141	81.151EV	100 Broadway	13,000	13,000	---	---
143	81.353ED	1000 Montgomery (C)	39,000	39,000	---	---
146	83.99EC	644 Broadway	42,800	42,800	---	---
161	80.191	Mirawa Center	36,000	36,000	30,650	30,650
164	81.631D	847 Sansome	23,750	23,750	---	---
164	81.573D	50 Osgood Place	22,500	22,500	9,100	9,100
166	DR80.15	750 Battery	105,400	105,400	12,800	12,800
176	81.673	Columbus/Pacific (Savoy)	49,000	49,000	22,000	22,000
176	82.368ED	900 Kearny	25,000	25,000	5,000	5,000
228	81.610ED	569 Sacramento (C)	19,000	19,000	---	---
261	81.249ECQ	333 Califarnia (M)	640,000	466,500	15,500	15,500
262	81.206D	130 Battery	41,000	41,000	---	---
265	81.195ED	388 Market at Pine	234,500	85,500	10,000	-8,500
267	81.241D	160 Sansome	2,200	2,200	---	---
268	81.422D	250 Montgomery at Pine	105,700	65,700	8,000	8,000
270	81.175ED	466 Bush	86,700	86,700	7,800	2,200
271	83.13E	582 Bush	18,900	18,900	---	---
288	81.461ED	333 Bush (Campeau) (M)	498,400	458,100	20,900	20,900
294	82.870	44 Campton Place	7,600	7,600	---	---
311	82.120D	S. F. Federal	246,800	218,850	1,600	-9,440
716	81.581ED	Polk/O'Farrell	61,600	61,600	22,400	22,400
816	82.212ED	330-350 Gough (M)	16,000	16,000	---	---
647	82.24V	1581 Bush (C)	16,000	16,000	---	---
690	SFRA	Post/Van Ness	88,000	88,000	---	---
834	82.603E	25 Van Ness (C)	101,800	42,800	36,400	36,400
3518	81.483V	291 10th Street	25,700	25,700	---	-25,700
3524	82.137V	44 Gough (C)	30,000	30,000	---	---
3705	80.315	Pacific III Apparel Mart	332,400	332,400	---	---
3707	81.492ED	90 New Montgomery	124,300	124,300	3,350	3,350
3709	81.113ED	Central Plaza	353,100	136,300	17,400	17,400
3715	82.16EC	121 Stevart	33,200	33,200	---	---
3722	81.417ED	144 Second at Minna	30,000	30,000	---	---
3724	81.102E	Holland Ct. (C)	27,850	27,850	---	---
3729	82.860	774 Tehama	5,800	5,800	---	---
3732	81.548DE	466 Clementina (C)	15,150	15,150	---	---
3733	EE81.2	868 Folsom	65,000	65,000	---	---
3735	EE80.106	95 Hawthorne (C)	61,900	61,900	---	---
3738	DR80.5	315 Howard	294,000	294,000	3,200	3,200
3741	82.203C	201 Spear	229,000	229,000	5,200	5,200
3749	EE81.18	Marathan - 2nd & Folsam	686,700	686,700	35,300	35,300
3752	EE77.220	Office Bldg. (YBC SB-1)	11,000	11,000	---	---
3763	81.287V	490 2nd/Bryant (C)	40,000	40,000	---	---
3763	81.381	480 2nd/Stillman (C)	35,000	35,000	---	---

TABLE D-1
(continued)

APPROVED PROJECTS (continued)

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
3775	81.147V	338-340 Brannan (C)	36,000	36,000	---	---
3776	81.693EV	539 Bryant/Zoe	63,000	63,000	---	---
3776	EE81.59	Welsh Commons (M)	55,600	55,600	12,000	12,000
3787	81.306	252 Townsend at Lusk	81,900	81,900	---	---
3788	81.296Z	690 2nd/Townsend (C)	16,600	16,600	16,000	16,000
3789	81.552EV	625 2nd/Townsend (C)	157,000	157,000	---	---
3794	81.569EV	123 Townsend	104,000	49,500	---	---
3794		155 Townsend	19,000	19,000	---	---
3803	81.244D	China Basin Expansion	196,000	196,000	---	---
	TOTAL APPROVED PROJECTS		**5,985,850**	**5,224,800**	**297,600**	**236,760**

(C) = Conversion (generally industrial and/or warehouse to office)
(M) = Mixed Use (office/residential/commercial)

TABLE D-1

(continued)

PROJECTS UNDER CONSTRUCTION

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
106	81.415ED	1299 Sansome	41,000	41,000	3,500	3,500
163	EE81.1	901 Montgomery	63,000	63,000	18,800	18,800
164	81.251D	936 Montgomery	21,500	11,500	---	---
166	CU81.7	222 Pacific at Front (C)	142,000	142,000	---	---
167	SFRA	Golden Goteway III	103,000	103,000	---	---
206	81.165D	401 Washington at Battery	13,200	13,200	1,800	1,800
208	81.104EDC	Washington/Montgomery (M)	235,000	233,300	4,000	-1,200
227	EE80.296	Bank of Canton	230,500	177,500	---	-800
237	DR80.6	353 Sacramento (Daon)	277,000	251,000	8,300	-2,000
239	DR80.1	456 Montgomery	160,550	160,550	24,250	24,250
240	DR80.16	550 Kearny	71,400	71,400	---	---
240	81.705ED	580 California/Kearny	329,500	260,000	6,500	6,500
271	81.517	453 Grant	27,500	27,500	6,200	6,200
287	81.550D	Sloane Building (C)	125,300	125,300	30,000	30,000
288	DR80.24	101 Montgomery	264,000	234,000	5,900	-14,100
289	81.308D	One Sansome	603,000	603,000	7,000	7,000
312	EE79.370	50 Grant	90,000	90,000	---	---
351	DR79.24	Mardikian/1170 Market	40,000	40,000	---	---
672	SFRA	Wealth Investments	104,500	104,500	---	---
738		One Flynn Center	25,000	25,000	---	---
3512	82.14	Von Ness Plaza	170,000	170,000	6,000	6,000
3702	81.25	1155 Market/8th	138,700	138,700	8,800	8,800
3708	80.34	25 Jessie/Ecker Square	111,000	111,000	---	---
3709	80.36	Five Fremont Center	791,200	722,200	35,000	17,300
3715		141 Steuart	80,000	80,000	---	---
3717	79.236	101 Mission at Spear	219,350	219,350	---	---
3717	EE80.349	Spear/Main (160 Spear)	279,000	279,000	7,600	7,600
3717	82.82D	135 Main	260,000	260,000	4,000	4,000
3718	DR79.12	Pacific Goteway	540,000	540,000	7,500	7,500
3724	SFRA	Yerba Buena West	335,000	335,000	---	---
3735	SFRA	Convention Plaza	339,000	339,000	---	---
3735	SFRA	Planter's Hotel (C)	20,000	20,000	---	---
	TOTAL PROJECTS UNDER CONSTRUCTION		6,335,200	6,076,000	185,150	131,150

(C) = Conversion (generally industrial and/or warehouse to office)
(M) = Mixed Use (office/residential/commercial)

TABLE D-1
(continued)

PROJECTS COMPLETED BUT NOT IN BASE CASE ANALYSIS

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction	Date Occupied
196		736 Montgomery	40,000	40,000	---	---	
196	CU79.49	Pacific Lumber Co.	92,000	92,000	---	---	
263	CU79.12	101 California	1,265,000	1,257,000	24,700	-14,300	
292	DR79.13	Crocker National Bank	676,000	495,000	86,000	54,000	
351	DR79.133	10 U.N. Plaza	92,050	92,050	---	---	
762	SFRA	Opera Plaza (M)	50,000	50,000	---	---	
3712	DR79.11	Federal Reserve Bank	640,000	640,000	---	---	
3717	EE78.413	150 Spear	330,000	330,000	---	---	7/30/82
	TOTAL		**3,185,050**	**2,996,050**	**110,700**	**39,700**	
	GRAND TOTAL (ALL PROJECTS)		**20,036,820**	**18,438,390**	**913,500**	**621,790**	

Source: Department of City Planning

TABLE D-2

GROSS SQUARE FEET OF CUMULATIVE OFFICE AND RETAIL DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF JUNE 1, 1983

	Office (Gross Sq. Ft.)		Retail (Gross Sq. Ft.)	
Status of Project	Total New Construction	Net New Construction	Total New Construction	Net New Construction
Under Formal Review	4,679,970	4,141,540	302,050	214,175
Approved	5,985,850	5,224,800	297,600	236,760
Under Construction	6,335,200	6,076,000	185,150	131,150
Completed But Not In Base Case Analysis	3,185,050	2,996,050	110,700	39,700
GRAND TOTALS	**20,036,820**	**18,438,390**	**913,500**	**621,790**

TABLE D-3

MAJOR OFFICE BULDING CONSTRUCTION
IN SAN FRANCISCO (IN GROSS SQUARE FEET)

Year	Total Gross Square Feet Completed	5-Year Total	5-Year Annual Average	Cumulative Total of Office Buildings[2]	Cumulative Total of All Downtown Office Buildings[3]
Pre-1960				28,145,000	24,175,000
1960	1,183,000				
1961	270,000				
1962	-				
1963	-				
1964	1,413,000				
1960-1964		2,866,000 (2,580,000)[1]	573,200 (516,000)[1]	30,725,000	26,754,000
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
1965-1969		8,379,000 (7,541,000)[1]	1,675,800 (1,508,000)[1]	38,266,000	34,295,000
1970	1,853,000				
1971	-				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
1970-1974		8,615,000 (7,753,000)[1]	1,723,000 (1,550,000)[1]	46,019,000	42,048,000

(continued)

TABLE D-3

MAJOR OFFICE BULDING CONSTRUCTION
IN SAN FRANCISCO (IN GROSS SQUARE FEET)
(continued)

Year	Total Gross Square Feet Completed	5-Year Total	5-Year Annual Average	Cumulative Total of All Office Buildings[2]	Cumulative Total of All Downtown Office Buildings[3]
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	-				
1979	2,532,000				
1975-1979		8,157,000 (7,341,000)[1]	1,631,400 (1,468,000)[1]	53,360,000	49,389,000
1980	1,284,000				
1981	3,029,000				
1982	3,771,000				
1980-1982		8,084,000[4] (7,275,600)[1]	2,694,700[4] (2,425,200)[1]	60,635,600	56,559,600

[1]Total net square feet (90% of gross). Net new space is added at an increase factor of 90%, since it is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building

[2]Source: San Francisco Downtown Zoning Study, Working Paper No. 1, January 1966, Appendix Table 1, Part 1. For pre-1965, data include the area bounded by Vallejo, Franklin, Central Skyway, Bryant and Embarcadero. Also includes one-third of retail-office mixed use. For post-1964, data include the entire city.

[3]Gross Floor Space for downtown offices are included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the cited January 1966 report. For post-1964, the entire area east of Franklin Street is included.

[4]Three-year total and average.

SOURCE: Department of City Planning, March 15, 1983

TABLE E-1

PROJECTED EFFECTS OF DOWNTOWN OFFICE DEVELOPMENT ON REGIONAL HOUSING MARKETS

Housing Market	Net Office Project Demand in 1985 Number of Households	Cumulative Demand 1983 to 1990 Number of Households	Gross Net[4] Housing Stock 1983-1990	Demand as % of Growth 1983-1990	Project Demand as % of Growth 1983-1990
San Francisco	102-234	7,900 to 16,400	12,000	0.8 - 1.9	66%-137%
North Bay[2] (Marin and Sonoma Counties)	111	6,800	36,800	0.3	19%
Peninsula[2] (San Mateo and Santa Clara Counties)	167	10,200	87,000	0.2	12%
East Bay[2] (Alameda and Contra Costa Counties)	278	17,000	111,800	0.3	15%
TOTAL	757-910	41,900 to 50,400	247,000 to 47,100	0.3 - 0.4 248,200	17%-20%

[1]The range of San Francisco employees and households based on a report prepared by Recht Hausrath Associates, referenced as Appendix C in the 101 Montgomery Street Final EIR, EE 80.26, certified May 7, 1981 (15-30% of all employees would reside in San Francisco and 1.4 workers would occupy each household) and "Office Housing Production Program (OHPP) Interim Guidelines," Department of City Planning, January 22, 1982 (40% of all employees would reside in San Francisco and 1.8 workers would occupy each household).

[2]Distribution of employees based on weighted average of expected employees in Federal Reserve Bank (EE 78207), 101 California Street (EE 78.27), Pacific Gateway, (EE 78.61), and Crocker National Bank (EE 78.298), from 456 Montgomery Street Final EIR (EE 78.178), page 167 (12% in the North Bay, 18% in the Peninsula, 30% in the East Bay).

Project workforce of 1,330 and a ratio of 1.3 workers per household for based on 1980 Census data.

[3]Cumulative housing demand calculated from data on office projects presented in Table D-2, Appendix D, including those under construction (6,076,000), approved (5,224,800 sq. ft.), under formal review (4,141,540 sq. ft.) and completed but not occupied (2,996,050 sq.ft.).

[4]Net housing stock growth is based on "Projections 79," Association of Bay Area Governments, January 1980. Projections contained in that document for 1980-1990 were prorated to reflect 1982-1990 net housing stock growth.

TABLE E-2

HOUSING AFFORDABILITY BY HOUSEHOLD INCOME

Gross Annual Income Per Household or Per Individual	Maximum Affordable Monthly Housing[1] Expenditure	Housing Cost and Type of Unit	
		Monthly[2] Cost	Type of Unit (Price)
$ 5,000	$ 125		
8,300[3]	208		
10,000	250		
10,680	267	$ 267-	Census Median Rent[6]
11,560	289	289-	Studio Apartments[7]
15,000	375		
18,200	455	455-	Median Rent, All Units[7]
20,000	500		
23,520	588	588-	Rent, 3+ Bedroom Units[7]
25,000[4]	625		
27,300	683		
30,000	750		
35,000	875		
40,000	1,000		
40,880	1,022	1,022-	Lowest House Price ($95,000)[8]
45,000	1,125	1,125-	Census Median Value (104,600)[6]
50,000	1,250		
52,560	1,314		
55,000	1,375		
65,080	1,627	1,627-	Median House Price (151,203)[8]
101,880	2,547	2,547-	Highest House Price (236,750)[8]
300,000[5]	7,500		

[1]The Office Housing Production Program (OHPP) Interim Guidelines, January 1982, define affordable housing as follows:

> Rental expenses not exceeding 30% of gross monthly income, adjusted for family size; and home ownership expenses not exceeding 38% of gross monthly income, adjusted for family size, including mortgage payments, property taxes, insurance, and/or homeownership association dues.
>
> For the purpose of this table, 30% of gross monthly income is used to calculate housing affordability for both renters and owners. For owners it is assumed that eight percent of gross monthly income would cover property taxes, insurance, and/or homeownership association dues and other related expenses. No adjustment has been made for family size because family circumstances vary widely.

[2]Monthly housing costs refer to rents and mortgage payments for the housing prices shown in parentheses; sources of rents and house prices are as footnoted. Monthly costs of ownership housing were calculated as monthly mortgage expenses assumping 20% down payment, 30-year mortgage, and 16% interest rate, not including insurance, property taxes, and other related housing costs.

[3]U.S. Bureau of Labor Statistics, March 1981, "Area wage survey for the San Francisco-Oakland, California Metropolitan Area," $8,300 was the mean 1980 income if inexperienced file clerks, one of the lowest-paid office occupations listed.

[4]The $27,300 income figure was derived by inflating the $16,300 median income of downtown office workers from the 1974 SPUR survey through December 1981 by 67% using U.S. Bureau of Labor Statistics national wage information for nonsupervisory finance, insurance, nd real estate sector employees since 1974.

[5]Montgomery-Washington Building FEIR, 81.104E, certified January 28, 1982. The median salary of wage earners at 601 Montgomery Street was estimated to be $52,560 and the highest salary for corporate officers $300,000, according to a 1981 survey.

[6]City Planning and Information Services, "1980 Census Information," March 1982: Rental data include residential hotels whose rent levels may be substantially lower than other types of rental dwellings and may therefore have an effect on the median rent.

[7]Department of City Planning, "Rent Survey," 1980. These data are based on a small nonrandom sample of newspaper ads and may not reflect true rental costs.

[8]San Francisco Board of Realtors, "Multiple Sales Service," October 5, 1981. (Annual data on housing sales prices including all homes sold from February 11, 1981 to October 1, 1981).

NOTE: The age of the 1974 SPUR study referenced in footnote 4 above and the small sample size of the 601 Montgomery Street survey referenced in footnote 5 limit the statistical accuracy of the data when applied to individual proposed office projects. These two sources constitute the only salary information available for downtown San Francisco employees.

SUMMARY OF RECENT STUDIES ON FISCAL IMPACTS OF DOWNTOWN DEVELOPMENT

STUDY, AUTHOR, DATE	PURPOSE OF STUDY	DATA SOURCES	STUDY METHODOLOGY	CONCLUSIONS
"Fiscal Concerns" in Downtown San Francisco Conservation and Development Planning Program, Phase I Study, Sedway/Cooke, et al., October 1979, pp. 56-59	To qualitatively assess the likely fiscal impact of new development in the C-3 area under Proposition O.	SPUR STUDY (1975)	SPUR cost/revenue estimates for downtown in 1973 and for projected growth 1974-1990 were assumed. Proposition 13's effect on revenues and the possible need for increased transportation infrastructure were considered. Generalized conclusions about fiscal impact of new development were drawn.	1) After Proposition 13, "costs may exceed revenues in the downtown by as much as 25%." 2) "[N]ew downtown development will not solve the city's growing fiscal problem; without new revenue sources, development will make it worse in the long run."
Downtown Highrise District Cost Revenue Study, Arthur Andersen & Co., November 1980	To quantify for 1976-77 and 1978-79 how much revenue the C-3-O area generated and how much it costs to provide city services to the area.	Data compiled from city records and through conversations with city officials.	Only revenues generated within the C-3-O and costs of providing services to the C-3-O counted. "The principle guiding the study methodology was to calculate the amount of revenue that San Francisco would lose and the costs that could be reduced if the Downtown Highrise District were a separate city."	The C-3-O generated $56.79 million in 1976-77, or 61% more than the cost of city services to the area. In 1978-79, revenues were $53.29 million, or 48% greater than costs.
"Fiscal Considerations" Appendix C, 101 Montgomery Street FEIR, Recht Hausrath & Associates, January 1981.	To draw generalized conclusions about "how new development downtown in a post-Proposition 13 environment is likely to change the City's fiscal health from what it would be without new development."	SPUR Study, city records and conversations with city officials.	Under alternative assumptions about the cost/revenue balance in existing buildings and in new buildings, the fiscal impact over time of new development was compared to that of no new development.	"[A]n on-going process of new development would improve the City's fiscal situation.
Downtown Highrise District Cost/Revenue Study, David Jones, February 1981.	To quantify for 1978-79 the revenues generated by businesses in the C-3-O and the service costs imposed on the city and BART by the C-3-O.	Arthur Andersen study.	The Jones study differs from the Andersen study primarily as follows: 1) Costs of BART (but not revenues to BART) are included; 2) Only revenues paid by businesses and building owners are considered; 3) Muni deficit is computed differently; 4) Most costs are estimated as a percentage of revenues rather than on the basis of actual service demand in the C-3-O.	The C-3-O imposed costs of $94.4 million on San Francisco and BART, or 125% more than the revenues the area's businesses and building owners generated to San Francisco.
Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, Gruen Gruen + Associates March 1981	To quantitatively estimate city revenues from the C-3-O and costs of serving the C-3-O in 1998, assuming the addition of 30 million square feet of building space in the C-3-O between 1981 and 1998.	Arthur Andersen study; data compiled from city records and through conversations with city officials.	"Only direct effects are considered." Costs are only measured for services "provided within the physical limits of the C-3-O district" and revenues are limited to "taxes on buildings within the district and the activities that take place within those buildings." Assumes the Arthur Andersen study is accurate and builds upon it.	In 1980, revenues from the 39 million square feet of building space in C-3-O were 1.66 times as large as costs. In 1998, after completion of the 30 million square feet of new space, revenues from the entire 69 million square feet of C-3-O building space would increase to 1.92 times as large as costs.

SOURCE: Recht, Hausrath and Associates, January 1981.

APPENDIX F

SAN FRANCISCO AIR POLLUTANT SUMMARY 1979-1981[1]

TABLE F-1

POLLUTANT	FEDERAL STANDARD[2]	STATE STANDARD[3]	1979	1980	1981
Carbon Monoxide (CO					
1-hour average (ppm)	35	none			
Highest hourly average			20	10	8
No. of exceedances			0	0	0
8-hour average (ppm)	9	none			
Highest 8-hour average			13.8	7.5	5.3
No. of exceedances			1	0	0
Ozone (O_3)					
1-hour average (ppm)	.12[4]	.10			
Highest hourly average			0.08	0.09	0.07
No. of exceedances			0	0	0
Nitrogen Dioxide (NO_2)					
1-hour average (ppm)	none	.25			
Highest hourly average			0.16	0.17	0.11
No. of exceedances			4	0	0
Sulphur Dioxide (SO_2)					
24-hour average (ppm)	none	.05			
Highest 24-hour average			0.034	0.018	0.016
No. of exceedances			0	0	0
Total Suspended Particulate (TSP)					
24-hour average (ug/m^3)	none	100			
Highest 24-hour average			117	173	103
No. of exceedances			1	6	0

POLLUTANT	FEDERAL STANDARD[2]	STATE STANDARD[3]	1979	1980	1981
Annual Geometric Mean (ug/m3)[5]	None	60			
Annual Geometric Mean			42.0	52.1	56.0
Annual Exceedances			No	No	No
Lead					
3-month Average (mg/m3)	None	1.5			
Highest 3-month average			0.95	0.53	0.35
No. of exceedances			0	0	0

[1] 1979 data collected at 939 Ellis Street. 1980-81 data collected at 900 23rd Street.

[2] Federal standard is not to be exceeded more than once per year. Annual average standards are not be exceeded.

[3] State standards are not to be equalled or exceeded.

[4] The federal standard is given in terms of Expected Annual Excesses which is based on a 3-year running average.

[5] The annual Geometric Mean is a single number which applies to an entire year of data. "No" indicates TSP concentrations did not exceed 60 (ug/m3).

Note: ppm = parts per million
ug/mg3 = micrograms per cubic meter
mg/m3 = milligrams per cubic meter

Source: BAAQMD, Air Pollution in the Bay Area by Station and Contaminant; and California Air Resources Board, California Air Quality Data.